(32,006)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1926

No. 439

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA

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IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE

SOUTHERN DISTRICT OF WEST VIRGINIA.

No. 1517. In Equity.

UNITED FUEL GAS COMPANY, a Corporation,
Plaintiff,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS and JAMES J. DIVINE, constituting said The Public Service Commission of West Virginia; HOWARD B. LEE, Attorney General of the State of West Virginia; and FRED M. LIVEZEY, Counsel for said The Public Service Commission of West Virginia,
Defendants.

BILL OF COMPLAINT AND EXHIBITS "A", "B" AND "P. S. C. OPINIONS" FILED THEREWITH.

HAROLD A. RITZ,
Solicitor for Plaintiff.

LOVETT PRINTING CO., LAW PRINTERS, CHARLESTON, W. VA.

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE

SOUTHERN DISTRICT OF WEST VIRGINIA.

UNITED FUEL GAS COMPANY, a corporation,
Plaintiff,

vs.) IN EQUITY.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS and JAMES J. DIVINIE, constituting said The Public Service Commission of West Virginia; HOWARD B. LEE, Attorney General of the State of West Virginia; and FRED M. LIVEZEY, Counsel for said The Public Service Commission of West Virginia,
Defendants.

To the Honorable George W. McClintic, Judge of the District Court of the United States for the Southern District of West Virginia:

United Fuel Gas Company, a corporation, brings this its bill of complaint against The Public Service Commission of West Virginia, Birk S. Stathers, Ernest D. Lewis and James J. Divine, constituting said The Public Service Commission of West Virginia; Howard B. Lee, Attorney General of the State of West Virginia; and Fred M.

Livezey, Counsel for said The Public Service Commission of West Virginia, defendants, and respectfully shows:

FIRST.

United Fuel Gas Company is a corporation, duly organized and existing under and by virtue of the laws of the State of West Virginia, and is a citizen and resident of said State, and is engaged in the production, transportation, distribution and sale of natural gas for light and fuel within and about several cities, towns and villages in the said Southern District of West Virginia, the principal thereof being the City of Charleston, situate in the County of Kanawha, in said Southern District, and the City of Huntington, situate in the County of Cabell, in said Southern District, and is also engaged in selling said natural gas, so produced by it, to other companies or distributing systems, by which it is sold to the inhabitants of other states of the Union for the purpose of fuel and light; and that the principal office and place of business of said United Fuel Gas Company is at the City of Charleston, in said Southern District of West Virginia.

The defendant The Public Service Commission of West Virginia is a body created and existing under and by virtue of an Act of the Legislature of West Virginia, passed on the 21st day of February, 1913, and known as Chapter 15 of the Acts of the Legislature of 1913, entitled: "An Act to create a Public Service Commission and to prescribe its powers and duties, and to prescribe penalties for the violation of the provisions of this Act"; and is exercising the powers conferred by said Act, as the same was originally passed, and also conferred by the amendments made to said Act by subsequent legislation. The said Commission has its principal office in the City of Charleston, in said State, and within said Southern District of West Virginia, and is constituted as hereinafter set forth.

The defendant Birk S. Stathers is a citizen of the State of West Virginia and a resident of the City of Weston, in

the County of Lewis, in the Northern District of said State.

The defendant Ernest D. Lewis is a citizen of the State of West Virginia and a resident of the City of Clarksburg, in the County of Harrison, in the Northern District of said State.

The defendant James J. Divine is a citizen of the State of West Virginia and a resident of the City of Welch, in the County of McDowell, in the Southern District of said State.

The last three named defendants are the duly appointed, qualified and acting members of said defendant The Public Service Commission of West Virginia, the said Birk S. Stathers, under the provisions of law creating said Commission, having been designated to act as chairman thereof and now exercising the powers and duties thereof.

The defendant Howard B. Lee is a citizen of the State of West Virginia and a resident of the City of Bluefield, in the County of Mercer, in the Southern District of said State, and is the duly elected, qualified and acting Attorney General of the State of West Virginia, and is charged with the duty of enforcing the laws of said State.

The defendant Fred M. Livezey is a citizen of the State of West Virginia and a resident of the City of Huntington, in the County of Cabell, in the Southern District of said State, and is the duly appointed, qualified and acting counsel for said The Public Service Commission, under and by virtue of the provisions of law, and is charged by law with the duty of enforcing the orders of said Commission.

SECOND.

This suit is of a civil nature, in equity, and is brought for the purpose of enjoining the enforcement of an order of The Public Service Commission of West Virginia, entered on the 24th day of March, 1925, refusing to allow the plaintiff to increase its rates for furnishing natural gas to its customers in the State of West Virginia, as

more particularly stated hereinafter; and the cause of action hereby asserted arises under the Constitution and laws of the United States, in that the rates which plaintiff is required to charge, because of the aforesaid order, are confiscatory of its property used and useful in furnishing service within the said State of West Virginia to the public, and the said order and the proceedings of the said The Public Service Commission deprive the plaintiff of its property without due process of law and deny to the plaintiff the equal protection of the laws, in violation of its rights under the Fourteenth Amendment to the Constitution of the United States, and said order is therefore null and void, as is shown more fully hereinafter.

The amount in controversy in this suit exceeds the sum or value of Three Thousand Dollars ($3,000.00), exclusive of interest and costs.

THIRD.

That prior to the 26th day of April, 1924, certain maximum rates or charges were fixed by the defendant The Public Service Commission of West Virginia, which the plaintiff was permitted to charge for the service rendered by it to its consumers in said State of West Virginia, the same being shown by the schedule hereto attached and made part of this bill, marked EXHIBIT "A".

That after conducting its business with its patrons in West Virginia under the schedule aforesaid for a considerable length of time, plaintiff discovered that it was impossible to operate the same so as to yield to it a fair return upon the property used and useful in the public service and to pay the expenses of conducting said business. It thereupon, on the 26th day of April, 1924, filed with the said Public Service Commission a schedule of increased rates, with rules and regulations, under which it proposed, after the 31st day of May, 1924, to furnish natural gas to its customers in the State of West Vir-

ginia. Said new schedule of rates and rules and regulations accompanying the same, were filed with the said Public Service Commission pursuant to the provisions of law of the State of West Virginia requiring such a schedule to be filed before any change could be made in the rates or practices then being used. A copy of said proposed schedule of rates, containing rules and regulations as aforesaid, is filed herewith as part hereof, marked EXHIBIT "B".

That immediately upon the filing of said schedule of rates, as aforesaid, to-wit, on the 26th day of April, 1924, the said defendant The Public Service Commission entered an order, by the terms of which it purported to suspend the putting into effect the said schedule of rates and rules and regulations, and forbade this plaintiff to use the same in the conduct of its business and in the delivery and sale of its product to its consumers, until the 22nd day of August, 1924, and ordered that a hearing be held, with a view of determining whether or not the plaintiff should be allowed to establish the rates and rules and regulations shown by said schedule, or any different rates than those already being charged by it, and has, by successive orders, continued such suspension in force until the entry of its final order herein on the 24th day of March, 1925, to which more particular reference will be hereinafter made.

FOURTH.

That by the order entered on the 26th day of April, 1924, suspending the rates proposed to be established by this plaintiff, the said Public Service Commission also set down for a hearing the matters arising upon the said schedule of rates before the said Commission for the 28th day of May, 1924, and on the said 28th day of May, 1924, the plaintiff appeared before said Commission for the purpose of showing that the rates then in force and effect, and still in force and effect, did not furnish to it an adequate return upon the property devoted by it to the pub-

lic service. That extensive hearings were had before said Commission upon this question, commencing on the said 28th day of May, 1924, and continuing, intermittently, until in the month of January, 1925.

The said plaintiff showed before said Commission the value of its properties and the value of the part thereof devoted to the public service in West Virginia. The properties of the plaintiff consist of the gas rights in a large acreage of land, to-wit, over 800,000 acres, situate in the Spencer, Clendenin and Kanawha fields, in the State of West Virginia, and the Triple State field, in the States of West Virginia and Kentucky; and, in addition to the gas rights in this acreage, said properties also consist of a large number of producing gas wells, of extensive transmission lines or pipe lines through which the gas is conveyed from said wells to the points where the same is distributed and delivered to its distribution systems, and of a large number of distributing lines in the various cities, towns and villages supplied by it, through which said gas is conveyed and delivered to its customers.

Said plaintiff procured an inventory and appraisal of all of its property to be made by a firm of independent engineers and appraisers, to-wit, the firm of Ford, Bacon & Davis, of New York City. This appraisal was made by the engineers and agents of said firm by actual observation of each piece of property upon the ground, and was made under the direct supervision and charge of Charles F. Uebelacker, an engineer of many years' experience in such business. Mr. Uebelacker and his corps of assistants not only made an accurate inventory of each item of property owned by the plaintiff and used in its business, but also appraised the value thereof as of the date of the making of said report, to-wit, the 31st day of December, 1923; and further, observed the condition of each item of property as to the extent that the same was deteriorated, and fixed the value thereof in its deteriorated condition.

The said firm of Ford, Bacon & Davis found that the reproduction value new of the plaintiff's said property, as

of the 31st day of December, 1923, was the sum of $74,493,601.00; that its present value—that is to say, its value after deducting from the value new the amount of observed deterioration,—as of the same date, was the sum of $66,070,496.00. Of the foregoing amounts, the sum of $36,449,176.00 was fixed by Mr. Uebelacker, of said firm of Ford, Bacon & Davis, as the value of the gas rights owned by the said United Fuel Gas Company, and the balance thereof, to-wit, the sum of $38,044,425.00 was fixed as the value of the Company's physical properties or plants, as of the 31st day of December, 1923, if the same had been entirely new, and the sum of $29,621,320.00 as the value of said physical properties and plants in their then deteriorated condition. It will thus be observed that in the physical properties, consisting of pipe lines, compressor stations and other such properties, there was observed by the engineers making said appraisal a deterioration of $8,423,100.00

The said appraised value of the Company's property above given, to-wit, the sum of $38,044,425.00 for the plant new and $29,621,320.00 for the plant in its deteriorated condition, was, for convenience and for the purpose of determining what part thereof should be attributed to the public service in the State of West Virginia, divided into what is termed by the engineers the "production system", "transmission system", "distribution system", "general property", "general overhead charges" and "working capital", including materials and supplies. The item of "production system" includes the property used in producing the gas and delivering it to the pipe lines of the Company to be conveyed to market. The "transmission system" includes the Company's pipe lines and compressor stations used in transporting the gas for delivery to its wholesale consumers and for delivery to the systems in the several cities and towns where it is engaged in the public service business. The "distribution system" includes the value of the plants, including the street mains, meters and all other devices used by the

Company in delivering the gas, after it reaches the city limits, to the consumers. The item of "general property" includes the Company's office buildings and other properties not attributable directly to the three foregoing. The item of "general overhead charges" is the allowance for superintendence, engineering and other charges not included in the costs of labor and material going into the plant; and the item of "working capital" includes the amount of money which must be kept on hand by the Company constantly to carry on its business, as well as the value of the material and supplies which must be constantly kept on hand to meet the Company's requirements. There is in the foregoing appraisal no amount included as the value of the property as a going concern, usually termed "going concern value".

At the time the said hearing began before said Commission, certain interested parties appeared and protested, among them being the City of Huntington and the City of Charleston.

The detailed inventories made by the engineers under the direction of Ford, Bacon & Davis, were filed before said Commission, together with the value placed on each item of property, embracing several volumes. The same were also summarized in a general report, which was also filed before said Commission.

After the said evidence was introduced showing the items of said property and the valuation of each item, and the total value thereof, the said protestants requested time within which to have an engineer value the property of the plaintiff in detail, in order to overthrow the valuation placed thereon by said Ford, Bacon & Davis. This time was granted by the Commission, and the said protestants employed engineers and accountants for the purpose of valuing the Company's property and otherwise examining into its affairs. The engineer thus employed by said protestants was later introduced as a witness before said Commission, and testified that he had checked the items of property included in the inventories made

by Ford, Bacon & Davis, and that he found said inventories absolutely correct; that he had also checked the value fixed thereon by the said Ford, Bacon & Davis, and that he found all of said values absolutely correct; that he had also observed the condition of said property, and had no criticism to make of the amount deducted from each item thereof by said Ford, Bacon & Davis because of its deteriorated condition. The only criticism that was made of said valuation was that the allowances for overhead expenses were too high by an inconsiderable amount, and that depreciation or deterioration should be calculated upon the straight line basis instead of upon the actual observed condition.

The summary of the valuation of said property made by said Ford, Bacon & Davis is herewith filed as part of this bill, marked EXHIBIT "C"; and because of the fact that the engineers and experts of the protestants find nothing to criticise in the inventories and the valuation fixed on the various items of property, the said inventories, consisting of several volumes, are not filed herewith. The disagreements between the valuation made by the said Ford, Bacon & Davis and the experts employed by the protestants, will be hereinafter more fully adverted to.

FIFTH.

As before stated, in addition to the plants of the said plaintiff, its property consists of gas rights in more than 800,000 acres of land, situate as aforesaid. To show the value of these gas rights, the said plaintiff had a thorough survey made of the same by Ralph E. Davis, a Mining Engineer of years of experience in such work. He made a careful study of all of the Company's gas rights and gas properties, observing present conditions and past performances of all of the wells drilled by the Company, as well as wells drilled by others in the gas fields wherein the plaintiff's gas rights are located. He found, as a result of this study, that there were certain gas rights owned by the Company which were entirely developed

and the value of which was proven by such complete development, which he classified as "proven acreage" or "proven territory". He also found that there was a large amount of such property which was partially developed by the plaintiff and which lay in such proximity and in such relation to property developed by the plaintiff and by other gas companies that it was practically certain that the same contained natural gas. This territory, for convenience, he classified as "probable acreage". These two classifications he found covered about 260,000 acres of the territory embraced in that in which the plaintiff Company owned the gas rights. The rest of the territory in which the said plaintiff is the owner of the gas rights, consisting of 550,000 acres in round numbers, was not considered sufficiently tested to determine its value for gas purposes, although much of it, because of its location, was found to be, in all likelihood, such territory as would produce gas when properly developed.

Applying the result of his observations of the wells already drilled in the various fields in which the plaintiff's gas rights laid, said Davis concluded that the acreage of gas rights classified by him as "proven" and "probable", amounting to about 260,000 acres, contained, at the least, six hundred and sixty-three (663) billion cubic feet of gas. The method adopted by Mr. Davis in reaching this conclusion and the information which he had available for the purpose, fully appears from the report submitted by him and filed with said Commission with his testimony, which is filed herewith as part of this bill, marked EXHIBIT "D".

With this information furnished by Mr. Davis, the said firm of Ford, Bacon & Davis undertook to ascertain the value of these gas rights, and in doing so, attempted to set up such value, based upon figures which had no relation to public service control. The method used and the results obtained fully appear from the valuation report of said firm of Ford, Bacon & Davis, heretofore filed as part hereof, marked EXHIBIT "C". The result of

that report is that the said gas rights were found to have a value of $36,449,176.00.

In addition to this evidence as to the value of said gas rights, the said plaintiff also introduced before said Commission a number of witnesses, who were fully acquainted with said properties and all of the elements entering into the value thereof, and who were men of the longest and most extensive experience in the natural gas business of any in the United States, and who, from all of the information available, fixed the value of these gas rights of the said plaintiff, said values so fixed by said witnesses ranging from $30,000,000.00 to $45,000,000.00. The witnesses whose testimony bear directly upon this question are T. O. Sullivan, John B. Corrin, T. B. Gregory, John Davidson and A. G. Wamock. In addition to these witnesses, the plaintiff introduced before said Commission a number of other witnesses, who testified as to the value of natural gas at the mouth of the well in the various fields in which the said plaintiff produces gas, the purpose of such testimony being to show what the value of the gas was in the ground, it being already shown what it cost to produce the same. The witnesses testifying upon this question before said Commission were James J. Cabot, Ira G. Sayre, J. G. Ward, Ben C. Grosscup, J. A. Pierce, J. C. Blair and H. A. Wallace.

The evidence introduced by the plaintiff to show the valuation of the gas rights owned by it was not controverted by any testimony indicating that said gas rights were worth any less than the values fixed thereon by said witnesses, the least of such valuations being the sum of $30,000,000.00; and, in order that the court may have before it all of the testimony upon this question, as well as the other questions considered by the Commission, plaintiff herewith files as part of this bill a complete transcript of the testimony taken before said Commission marked EXHIBIT "TRANSCRIPT", together with the exhibits used by said witnesses, insofar as the same throw any light upon the questions here involved.

SIXTH.

Upon the consideration of all of said evidence, the said Public Service Commission of West Virginia reached a conclusion and found that the plaintiff was already receiving an adequate compensation for the service being rendered by it to its public service consumers in West Virginia, and denied it the right to increase said rates or to put into effect the schedule proposed by it. The principal opinion upon the said questions was written by the defendant Commissioner Birk S. Stathers, a concurring opinion was written by Commissioner James J. Divine, and Commissioner Ernest D. Lewis dissented from the conclusion reached by the other two defendant commissioners. A copy of said several opinions of said Commission, together with a copy of the order entered by said Commission, is herewith filed as part of this bill, marked EXHIBIT "P. S. C. OPINIONS".

SEVENTH.

A consideration of the testimony of the expert engineer introduced by the protestants, Mr. Hagenah, will show that the only criticism he has to make of the valuation of the Company's property made by said Ford, Bacon & Davis, is in the item of certain overhead charges and the amount allowed for deterioration. He contends in his evidence that the item of "cost of financing" and the item of "interest on money during construction", are not correct. However, the Commission, in its opinion, reviewed the evidence introduced on these two questions, and found that Mr. Uebelacker's figures upon these questions are correct.

Mr. Hagenah also contends, in his testimony, that the plant should be depreciated on the straight line basis, instead of in accordance with the actual wear and tear indicated. This contention the Commission also overruled, and found, under authority of a decision of the Supreme

Court of the United States, that the actual present value of the property is the thing to be considered.

The Commission, however, finds, in accordance with the testimony of Mr. Hagenah, that the going concern value of the Company is $3,000,000.00 instead of the amount contended for by Mr. Uebelacker, of the firm of Ford, Bacon & Davis, and it also finds that $990,000.00, testified to by both of the experts, is a proper amount for working capital, including the value of supplies required to be kept on hand. This would make a total present fair value of the physical property, including going concern value and working capital, of $32,621,320.00. The Commission, however, found that there was included in this amount an item of $254,332.00, the expense of "dry holes", which it was of the opinion should not be allowed, notwithstanding it was allowed by the engineers for both parties, and deducting which item leaves a valuation of $32,366,888.00, as the present fair value of the property as found by the Commission, excluding the value of gas rights belonging to the plaintiff. Because of the fact, however, that this property did not cost that much, the Commission found its present fair value to be the sum of $25,000,000.00 as of the 31st day of December, 1923. It is not apparent from the opinion of Commissioner Stathers how he arrives at this $25,000,000.00. It is not the present fair value of the property according to any standard set up by any witness in the case or by any testimony of any kind introduced in the case. It is significant, however, that the amount found by the Commission is even a little less than the amount found by protestants' expert after correcting this amount by the addition of the overhead charges, so that the effect of the Commission's decision is to allow even more depreciation or deterioration than is claimed by Mr. Hagenah.

In addition to the $25,000,000.00, the Commission allowed the sum of $666,639.45 which had been added to the plant since the 31st day of December, 1923, upon the testimony of the witness W. J. Hightower. The testimony

of this witness upon this question shows that there had been expended for additions to the plant the sum of $2,000,676.57, in addition to the value of parts which had been retired; that some of the work had not been entirely completed, and for that reason the Commission only allowed the sum of $666,639.45 and declined to allow the sum of $1,334,037.10 actually expended upon the plant for work not complete at the time. If this $2,000,676.57 be allowed as a proper item upon which plaintiff is entitled to a return, then the fair present value of its physical properties was $24,621,996.57, instead of $25,666,639.47, as found by the Commission, or practically $9,000,000.00 in excess of said amount.

And the said plaintiff here and now avers that the decision and action of the said Public Service Commission in fixing the present fair value of the Company's plants at $25,666,639.47, determines such value to be $9,000,000.00 less than the actual present fair value of said properties, and that the judgment and action of said Commission in refusing to allow this plaintiff the actual present fair value of its property as a basis for the rate to be paid by its consumers, is a taking of its property without just compensation and in violation of the Fourteenth Amendment to the Constitution of the United States.

EIGHTH

Plaintiff says that as to the gas rights and gas properties owned by the said plaintiff, said Commission refused to consider any of the evidence introduced by the plaintiff to prove the value of such rights, and allowed as a value thereof, for the purpose of rate-making, only the sum of $6,361,511.42, the amount that was actually paid therefor by the Company, or its predecessors, many, many, years ago. In addition to this amount that was actually paid for the acquisition of said rights, consisting of leases and leaseholds, the said Company has paid out the sum of $8,817,909.96 as rentals or installments upon said leases, by which the same have been kept in effect, making an

actual expenditure of over $15,000,000.00 for producing said leases and gas rights in their present condition; but said Public Service Commission declined to allow any part of the said $8,817,909.96 as a value of said leaseholds, even on the basis of the actual cost thereof, because the plaintiff paid these amounts out of earnings of the Company instead of declaring said earnings as dividends, it being the apparent holding of the Commission that if the plaintiff reinvested any of its earnings, it could receive no return thereon.

Plaintiff avers that if the cost of procuring these gas rights many years ago, in advance of development and proof of the productive character of the territory, is to be taken as the measure of their present fair value, then the rate of return to be allowed thereon should be that rate which would be ordinarily expected from an investment of such a speculative character. Plaintiff avers that at the time said leases were acquired for said sum the territory embraced therein was not developed and proven for gas, and it was not known that such territory was underlaid with valuable pools of gas to the extent that subsequent development has shown, and that when it invested said large sum of money in the acquisition of said leases, it took the risk of losing the whole thereof, or a large part thereof, if it should turn out, upon tests being made, that its judgment as to the said territory was in error; that the rate of return ordinarily received from a successful investment of this speculative and uncertain character is very much in excess of the 8% return allowed by the Commission. And this plaintiff says that if it is to be limited, in fixing the value of said gas rights, to the amount paid therefor at the time the same were untested and unproven, then the rate of return allowed by the Commission is entirely inadequate and not that rate of return which is ordinarily received by those making investments in such uncertain properties.

Paintiff avers that ordinarily, one investing money in undeveloped and untested oil and gas territory is en-

titled to receive, should his judgment turn out to be good, a rate of return of from 25% to 100% on the investment. Plaintiff avers that the amounts paid by it in the way of annual or quarterly installments upon said gas rights are as much a part of the purchase price thereof as the moneys paid by it originally therefor, and that there can be no justification for not allowing said payments to be treated as a part of the purchase price therefor, if that is to be taken as the basis of the present fair value.

Plaintiff avers, however, that the evidence introduced by it as to the present fair value of these gas rights is entirely competent and proper evidence, and cannot be disregarded; that the same is not in any way disputed or controverted; and that, on the basis of this evidence, the present fair value of such gas rights is at least the sum of $30,000,000.00.

And so the plaintiff avers that the action of said Commission in fixing the value of said gas rights at only $6,361,511.42 and denying the plaintiff the right to charge a rate to its consumers which would produce a return on any larger sum than that, is depriving the plaintiff of its property, to the extent of at least $25,000,000.00, without compensation, and is in violation of the Fourteenth Amendment to the Constitution of the United States.

NINTH.

Plaintiff further avers that the action of said Public Service Commission in fixing the value of its entire property at $35,000,000.00 and denying it the right to charge a rate which would yield no more than a fair return upon said sum of $35,000,000.00, is taking the plaintiff's property for public use without compensation, to the extent of more than $30,000,000.00, and is in violation of the Fourteenth Amendment to the Constitution of the United States.

TENTH.

Plaintiff avers that, as will appear from the opinion of Commissioner Stathers, the said Commission fixed the fair value of plaintiff's property upon which it was entitled to a return, in the aggregate, at $35,999,969.14, and adjudged that it was entitled to a return of 8% upon this amount; that it was also entitled to a return of 1½% for the purpose of depreciation,— that is, to provide a fund with which to make extraordinary repairs; and that it was entitled to a return upon this property sufficient to amortize the plant within the probable life of the property. But said Commission found, as will appear from said opinion, that the plaintiff was only entitled to have its said plant amortized to the extent of $20,000,000.00 instead of the full amount thereof. It found that while the present fair value of the property was $35,000,000.00, the Company had set up an amortization or depreciation reserve which now amounted to nearly $15,000,000.00, and that it must, therefore, deduct this from the present value of the property in order to determine the amount which remained to be amortized. This holding entirely loses sight of the fact that the property has already been amortized to the extent that this amortization reserve exists. It is shown that the valuation claimed by the plaintiff for its property is practically $9,000,000.00 less than the property would cost new, and it appears from the testimony in the case that there has already been extracted from the fields a large amount of gas sufficient to fully make up the balance of this amortization fund, and it was for the purpose of taking care of this wear and tear upon the physical plant, which has already occurred, and the depletion of the gas fields, which has already been done, that the said amortization reserve was created. To deduct this $14,000,000.00 amortization fund from the present fair value of the plaintiff's property is to take it off twice, and presents the anomalous position of giving the plaintiff a rate of return upon the present fair value of its property

as found by the Commission, but permitting the public to take that property and use it in the public business and consume it therein by paying only $20,000,000.00 therefor.

The plaintiff therefore avers that the action of said Commission in finding that it was only entitled to have its plant amortized to the extent of $20,000,000.00 instead of to the full extent of the present fair value thereof, was depriving it of its property without compensation, and an appropriation thereof to the public use without compensation, in violation of the Fourteenth Amendment to the Constitution of the United States; and that there must be provided a rate to be charged by the plaintiff to its customers which will yield it a sufficient sum not only to pay the return upon the investment, but to amortize the full value of the property within the probable life thereof.

The Commission has calculated that to amortize $20,000,000.00 worth of property would require a rate of return of 4.15% upon the present fair value of $35,000,000.00, as found by it, within the probable life of the property. It would therefore take practically 8% to amortize the full present fair value of the property within that time, and, as appears from the said opinion of Commissioner Stathers, this is the rate that has heretofore been allowed to the plaintiff Company, and to all other gas companies, for the purpose of amortization.

ELEVENTH

Plaintiff says that in determining whether or not it was entitled to increase its rates, the said Commission attempted to ascertain its total net income—that is, the income from all sources; that having ascertained this, it found that its total income was producing a sufficient return upon the present fair value of the plaintiff's property, as found by it. Plaintiff says that this method does not reach a just conclusion, for the reason that a large part of its gas is sold at a very much higher rate than that sold to the public service consumers in West Virginia. A large part of its gas is sold at wholesale, under

private contract, at a much higher rate than is received by it for the gas delivered to its public service consumers in the State of West Virginia, and the effect of the method adopted by the Public Service Commission in ascertaining whether or not a fair rate is being received, is to appropriate to the use of the pubic service consumers in West Virginia the profits made by the plaintiff upon the gas sold to its private consumers and to its public service consumers in other States. The plaintiff says that this return or profit made by it upon the gas sold to its wholesale consumers and others not regulated by the Public Service Commission of West Virginia, is its private property, and that the action of the Public Service Commission in taking these profits and appropriating them to the use of the public service consumers of the plaintiff in the State of West Virginia, is appropriating its property to the public use without just compensation, and is in violation of the Fourteenth Amendment to the Constitution of the United States.

Palintiff says that the question to be determined was not whether the plaintiff was making sufficient money from other sources to permit it to deliver gas to its public service consumers in West Virginia at the present rates, but do the present rates charged its consumers in West Virginia yield a fair return on the property devoted to that service. The proper method, of course, for determining this question would be to fix the expenses of the Company in operating its business and the amount it was entitled to receive to make a fair return upon this total investment. The total of the this amount would then be the amount which the Company should receive each year. It is recognized by the experts on both sides that the cost of delivering gas to the pubic service consumers in West Virginia is 7 cents more than the cost of delivering gas to a wholesale consumer at the point where the lines enter the distribution system; that is to say, the plaintiff's public service consumers in West Virginia should first be charged 7 cents per thousand cubic feet

on all of the gas distributed to them, and this amount taken from the total of expenses and return. The amount thus remaining would then be divided by the total gas sales of the Company, and the amount thus arrived at, added to the 7 cents, cost of distribution, would be the fair average rate which should be paid by West Virginia public service consumers. To illustrate what we mean, we will take the figures for expenses and return found by the Commission, but by using these figures we do not mean to adopt them, as will hereinafter appear. The Commission finds that the Company is entitled to receive as return $4,779,534.53 per year; that it has operating expenses of $3,734,802.82 per year, or a total of $8,514,337.35, from all sources, upon the assumption that all of the product of the plaintiff was delivered to its West Virginia consumers. The record shows that there was delivered to the West Virginia consumers 10,593,248 M. cu. ft. of gas during the year 1923, which, at 7 cents per thousand cu. ft., the cost of distribution, would amount to $741,527.35. Deducting this from the total amount which the Company is entitled to receive, according to the Public Service Commission's decision, we have $7,772,810.00, which must accrue from the production and transportation of the gas to a point equal to the city gate rate. The Company sold, as appears from the record, in the year 1923, for all purposes, 47,040,235 M cu. ft., and in order to get the $7,772,810.00 for producing and transporting this product to the city gate, it would be necessary for it to receive a rate for each thousand cubic feet of gas of 16½ cents, which, added to the 7 cents, cost of distribution, would require an average rate for the public service consumers in West Virginia of 23½ cents in order to produce even the grossly inadequate return provided by the Public Service Commission on the grossly depreciated value of the plaintiff's property, when the average rate in the City of Charleston is only 19 cents.

And so this plaintiff avers that the holding of the Public Service Commission that the rates now charged for

gas by this plaintiff to its public service consumers in West Virginia are adequate to provide a fair return, is an erroneous holding and deprives this plaintiff of its property, without just compensation, in violation of the Fourteenth Amendment to the Constitution of the United States.

Plaintiff says that in order to reach the conclusion that the plaintiff's net income is $7,260,962.38 for the year 1923, the Commission added to the actual income of the plaintiff the sum of $2,143,661.46, being the difference between what plaintiff charged the parent companies for the gas furnished to them and what the Commission thinks should have been charged; and by adding the further sum of $934,393.41 for one-half of the profits from the manufacture of gasoline. But it is significant that, in making this adjustment of earnings, the Commission does not reduce the same by the amount that the plaintiff received from other wholesale consumers and other consumers outside of the State of West Virginia in excess of the average West Virginia public service rate. Another matter which said Commission did not consider in adjusting this net income, and that is that if this supposititious state of income created by it was actually set up, the Federal income taxes upon the plaintiff's income would be increased to the extent of 12½% of the amount added to the actual income received, while the Commission, in its figures, makes no allowance whatever for such an amount. There are other adjustments and allowances which the Commission makes, as shown by the opinion, which have no support in the evidence.

The plaintiff goes thus into detail of the Commission's figures for the purpose of showing that even upon a fair application of the actual facts to the figures found by the Commission, the return which the Commission has found to be a fair one cannot be justified. And so this plaintiff avers that the holding of the Commission that it is now receiving from the public service consumers in West Virginia a fair return upon the value of its property devoted

to the public service in West Virginia, is depriving it of its property without compensation, and is in violation of the Fourteenth Amendment to the Constitution of the United States.

TWELFTH.

The Public Service Commission, in arriving at its conclusions, found that the plaintiff was entitled to receive from the Virginian Gasoline & Oil Company, one-half of the net profits arising from the manufacture of gasoline by that Company. Sometime since, the plaintiff sold to the Virginian Gasoline & Oil Company its gasoline extraction plants, together with all of its oil holdings, for a very substantial consideration and one which it is not questioned was entirely adequate. It also granted to that Company, the right to extract the gasoline from the natural gas produced by the plaintiff, for a royalty of one-eighth of the gross amount received by the said Virginian Gasoline & Oil Company therefor. Plaintiff asserts that the said contract was entirely fair and provides an adequate compensation to it for the privilege of extracting such gasoline; that no showing was made that in any way impeached the fairness of this contract, but that notwithstanding this, the Commission substituted for the consideration provided to be paid in the contract of one-eighth of the gross receipts from gasoline, a one-half of the net receipts therefor, which, for the year in question because of an extraordinary rise in the price of gasoline, happened to be very much more than the amount provided in the contract. Plaintiff avers that the provisions of the contract provide a much more equitable and stable compensation for this privilege than that set up by the Commission; that there is absolutely no basis for the findings of the Commission, while the provisions of the contract find a close analogy in the ordinary rentals and royalties paid for the production of petroleum products, it being the almost universal custom to pay one-eighth of the product for the right to produce the same.

And so this plaintiff says that the action of said Commission in increasing its revenues by the addition thereto of one-half of the profits from the manufacture of gasoline, has the effect of relieving the public service consumers from the payment of a fair return to it for the gas furnished to them, to the extent that such one-half of the net profits from said gasoline increases its net earnings, and that it is thereby deprived of the right to earn a fair return upon its property and is deprived of its property without just compensation, in violation of the Fourteenth Amendment to the Constitution of the United States.

THIRTEENTH.

The business of the plaintiff has been conducted efficiently and economically during all the time herein referred to, and is now being so conducted.

FOURTEENTH.

That under the provisions of the said Act of the Legislature of West Virginia creating said Public Service Commission, above referred to, it is provided that any public service corporation, or any officer or agent thereof participating therein, who shall violate any provision of the Act or any order of the Commission, shall be subject to heavy fines or be imprisoned in jail for each offense, or both, at the discretion of the court, and that the plaintiff cannot put into effect any rate which would afford to it reasonable compensation for the service rendered by it without being made subject to prosecution therefor and to the said fines and penalties.

That the defendants Howard B. Lee, Attorney General of the State of West Virginia, and Fred M. Livezey, Counsel for said Public Service Commission, are charged with the duty of enforcing said provisions of said Act and the orders of said Public Service Commission, and would proceed to enforce against this plaintiff and its officers and agents the fines and penalties provided by said Act,

should it undertake to charge any rate in excess of that now being charged by it.

FIFTEENTH.

That plaintiff is prevented and intimidated from putting into effect any schedule of rates for natural gas supplied to its patrons which would yield to it an adequate return for the service rendered, because of said highly excessive and unusually severe penalties provided in the above mentioned statute, and that because of the restraint and intimidation of said unusual penalties, this plaintiff is forced to keep in effect the requirements and schedules heretofore prescribed by said Public Service Commission, and the imposition, or threatened imposition of said penalties forces upon the plaintiff an abandonment of its rights to act independently of said void and illegal requirements of said Public Service Commission. That by reason and virtue of all the facts hereinbefore recited and the acts of the said Public Service Commission hereinbefore mentioned, and the penalty statute of the State of West Virginia provided in connection with charges and charges not made with the consent and approval of said Public Service Commission, this plaintiff is deprived of its property without due process of law and is compelled to produce, transport and deliver gas to its consumers for less than the actual cost thereof to it after allowing a sum sufficient to pay for the gas used and for the amortization of its plant.

WHEREFORE, this plaintiff being without adequate remedy in the premises, save in a court of equity, prays:

1. That a writ of subpoena may issue against each of the above named defendants, and that they may be required to answer this bill, but not under oath, answer under oath being expressly waived.

2. That the order of the defendant The Public Service Commission of West Virginia, entered on the 24th day

of March, 1925, permanently suspending the rate proposed to be put into effect by the plaintiff and forbidding the plaintiff to put said rate into effect, be adjudged, by decree herein, to be unconstitutional and void and to deprive this plaintiff of its property without just compensation therefor, in violation of the Fourteenth Amendment to the Constitution of the United States.

3. That insofar as the said order of the Public Service Commission requires this plaintiff to continue in force the rates now existing for natural gas to its public service consumers in the State of West Virginia, and finds that the rate now being charged is just and reasonable, it be adjudged to be unconstitutional and void and as depriving this plaintiff of its property without just compensation.

4. That the said defendants, and each of them, be enjoined, inhibited and restrained from interfering with the said plaintiff in putting into effect the schedule of rates fixed by it as aforesaid, and be enjoined, inhibited and restrained from enforcing against the said plaintiff any of the fines and penalties prescribed by the provisions of the laws of the State of West Virginia for violation of said order of said Public Service Commission.

5. That this court may make an inquiry and finding as to what would be a just and reasonable rate to be charged by this plaintiff to its consumers in the State of West Virginia, and that, upon such finding being made, an order may be entered enjoining, inhibiting and restraining the said defendants, and each of them, from interfering with this plaintiff in putting into effect a schedule of rates in conformity with such finding.

6. To the end that immediate and irreparable loss, damage and injury may not result to the plaintiff pending the hearing of its motion and prayer for an interlocutory injunction, that a temporary restraining order may be made and entered by this court, inhibiting the

defendants, and each of them, their agents and employees, from enforcing or attempting to enforce said order of said Public Service Commission against the plaintiff or its agents or employees, or from in any manner interfering with the plaintiff in putting into effect the schedule of rates so proposed by it as shown by said EXHIBIT "B", or from instituting any suit or proceeding to compel said plaintiff to comply with said order of said Commission.

And plaintiff prays for such other and further relief as may be equitable and just or suited to its case.

UNITED FUEL GAS COMPANY,

By H. A. WALLACE,
Vice President and General Manager.

HAROLD A. RITZ,
Solicitor for Plaintiff.

State of West Virginia,
County of Kanawha, SS:

H. A. Wallace, first having been duly sworn, deposes and says that he is Vice President and General Manager of the United Fuel Gas Company, the plaintiff herein, and is acquainted with the facts set forth in the foregoing bill of complaint; that the same was subscribed by him for and on behalf of said plaintiff, and that he is duly authorized thereto; that he has read the said bill of complaint by him subscribed and knows the contents thereof; and that the same is true, except as to matters therein alleged upon information and belief, and as to those, he believes it to be true.

H. A. WALLACE.

Taken, sworn to and subscribed before me, the undersigned, Notary Public.

Given under my hand and notarial seal this 1st day of April, 1925.

My commission expires Nov. 30, 1930.

JNO. C. MCELDOWNEY,
Notary Public.

(Notarial)
(Seal)

EXHIBIT "A"

NOTE: This is a mere compilation of existing schedules and supplements heretofore filed with the addition of rates for certain localities not formerly supplied.

P. S. C. W. VA. No. 3

Supersedes All Preceding Schedules

UNITED FUEL GAS COMPANY
(INCORPORATED)

NATURAL GAS

PRINCIPAL OFFICE:
CHARLESTON, WEST VIRGINIA

ISSUED DECEMBER 19, 1919. EFFECTIVE DECEMBER 20, 1919

APPLICABLE TO GAS SUPPLIED AFTER THE METER READINGS FOR THE MONTH OF DECEMBER, 1919

UNITED FUEL GAS COMPANY

Schedule of Rates for Natural Gas—Effective December 20, 1919.

WEST VIRGINIA

The following schedule shows all the rates charged or collected for gas supplied for any purpose, (except when sold to other gas companies) whether regularly or temporarily, and whether as a public service or otherwise, but

this company has not undertaken or professed to supply natural gas to the public generally, or without special contract governing the same, except for use in and about dwelling houses, offices, stores, laundries, schools, churches, club houses, hospitals, hotels, and other public buildings of a similar character, and which uses of natural gas are commonly known and will be hereinafter referred to as "domestic purposes." Service to the class of consumers, which this company undertakes to supply generally in the localities hereinafter listed, includes the supplying of natural gas for cooking, and for heating and lighting dwelling houses, regardless of the appliances used by the consumer. It also includes the supplying of gas for use in offices, club houses, laundries, schools, churches, hospitals, stores, hotels, and other public buildings, but, at the option of such consumers, that part of the gas used by them for heating their boilers will be supplied, through a separate meter, at the lower rate hereinafter mentioned as the manufacturing rate, upon condition that the consumer enter into a special contract such as that hereinafter mentioned, as required of consumers for manufacturing purposes, agreeing to accept a service for such boilers subordinate to that furnished to dwelling houses, by substituting coal or other fuel for heating the same when the company may require its entire supply for the use of its domestic consumers, who are charged the regular domestic rate.

Service for domestic purposes is furnished, subject to the uniform rules and regulations hereinafter set forth, for premises adjacent to streets or highways on which low pressure lines are laid, at the localities hereinafter mentioned, to all persons making the formal written application therefor, prescribed by the company, and agreeing to be bound by said rules and regulations as part of the contract relation created between the applicant and the company upon the acceptance by the latter of such application.

In addition to the foregoing this company, as incidental

to its public service, supplies natural gas to persons, firms and corporations under contracts, limited as to time and amount, for manufacturing purposes and for mining operations at the localities hereinafter mentioned, at what is termed, in this schedule, the rate for "Manufacturing Service," but only upon express condition that the service for such purposes is subordinate to the service given to domestic consumers, and may be discontinued at such time or times as may be necessary, in the judgment of the gas company, for the adequate supply of domestic consumers; but this company does not profess to supply all applicants for gas for such purposes, nor to be a public servant as to such service.

Gas furnished for use in gas engines is charged for at the rate for manufacturing service, provided such gas engines constitute part of the operating equipment of a factory in which gas is, at the same time, supplied for boilers, or furnaces (in which fuel other than gas can be readily substituted), and provided further, that the said gas engines are not used or operated when the supply of gas is discontinued at other parts of the factory for the benefit of domestic consumers. If gas is furnished for use in gas engines under different circumstances than those above mentioned, it is charged for at the domestic rate.

AMMA.

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

BAKER'S FORK, CHARLESTON DISTRICT, KANAWHA COUNTY.

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 3c per 1,000 cubic feet.

Minimum monthly charge, 50c.

BANNISTER:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

BARBOURSVILLE:

DOMESTIC SERVICE:

22c per 1,000 cubic feet; discount 1c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 22c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 19c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 18c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

BIG CREEK:

DOMESTIC SERVICE:

27½c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

BIG SANDY:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

BLUE CREEK:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

BURDETTE, CURRY DISTRICT, PUTNAM COUNTY:
TY:

DOMESTIC SERVICE:

27½c per 1,000 cubic feet; discount 21½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CEDAR GROVE:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CEDARVILLE:

DOMESTIC SERVICE:

33c per 1,000 cubic feet; discount 3c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CERRO:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CHARLESTON:

DOMESTIC SERVICE:

22c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 21c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 20c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 16c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

Manufacturing Service rate applies to State Buildings and Public Schools.

CHELYAN:

DOMESTIC SERVICE:

22c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CHERRY TREE BOTTOM:

DOMESTIC SERVICE:

27½c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CLENDENIN:

DOMESTIC SERVICE:

17c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CHURCHES:

12½ per 1,000 cubic feet. Rate provided for in franchise.

STREET LIGHTS:

25c per month for each one mantle lamp.

25c per month for each additional mantle.

MANUFACTURING SERVICE:

First 100,000 cubic feet each calendar month 16c per 1,000 cubic feet.

Second 100,000 cubic feet each calendar month 14c per 1,000 cubic feet.

All over 200,000 cubic feet each calendar month 12c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

COALBURG:

DOMESTIC SERVICE:

22c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 21c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 20c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 16c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

CULLODEN:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

EAST BANK:

DOMESTIC SERVICE:

22c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

EAST LYNN:

DOMESTIC SERVICE:

27½c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

ELK VIEW:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

FORT GAY:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

GAY:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

HUNT:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

HUNTINGTON:

DOMESTIC SERVICE:

22c per 1,000 cubic feet; discount 1c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 22c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 19c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 18c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

HURRICANE:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

STREET LAMPS:

25c per lamp, per month. Rate provided for in franchise.

JORDAN CREEK:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

KANAWHA CITY:

DOMESTIC SERVICE:

28c per 1,000 cubic feet; discount 3c per 1,000 cubic feet.

Minimum monthly charge, 50c.

KENOVA:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 22c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 19c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 18c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

KERMIT:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

KING:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

KYGER:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

LOCK SEVEN:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

LOGAN:

DOMESTIC SERVICE:

27½c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 26c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 19c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 13c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

McCLANAHAN:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MILLIKEN:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

NEWTON:

DOMESTIC SERVICE.

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

ONA:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

POCA:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

QUICK:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RAVENSWOOD:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 23½c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 17c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 13c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

REEDY:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

STREET LIGHTS:

50c per light per month.

RICH CREEK:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RIPLEY:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

STREET LIGHTS:

50c per light, per month.

SANDYVILLE:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

SILVERTON:

DOMESTIS SERVICE:

25c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

SISSONVILLE:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

SPENCER:

DOMESTIC SERVICE:

22c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 17c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 15c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 13c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

STREET LIGHTS:

City of Spencer, $2.50 per light, per year.

Private consumer, 50c per light, per month.

STOFFLE:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

THREE MILE:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

WALGROVE:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

WALTON:

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

WILLIAMSON:

DOMESTIC SERVICE:

27½c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 26c per 1,000 cubic feet.

Second 150,000 cubic feet each calendar month 19c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 13c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

WILSON HOLLOW, CHARLESTON DISTRICT, KANAWHA COUNTY:

DOMESTIC SERVICE:

28c per 1,000 cubic feet; discount 3c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RURAL DISTRICTS—Convenient to present lines in localities not listed above and not connected with any low pressure distributing plant.

CABELL COUNTY.
- Barboursville District.
- Grant District.
- Guyandotte District.

LINCOLN COUNTY.
- Carroll District.
- Duval District.

ROANE COUNTY.
- Curtis District.
- Geary District.
- Harper District.
- Reedy District.
- Smithfield District.
- Spencer District.
- Walton District.

KANAWHA COUNTY.
- Big Sandy District.
- Cabin Creek District.
- Charleston District.
- Elk District.
- Jefferson District.
- Malden District.
- Poca District.
- Union District.

PUTNAM COUNTY.
- Curry District.
- Scott District.
- Teays Valley District.

WAYNE COUNTY.
- Ceredo District.

JACKSON COUNTY.
- Ravenswood District.
- Ripley District.
- Washington District.

DOMESTIC SERVICE:

25c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

BOONE COUNTY.
Washington District.

MINGO COUNTY.
Harlow District.
Harvey District.
Lee District.
Warfield District.

LOGAN COUNTY.
Chapmanville District.

WAYNE COUNTY.
Butler District.
Lincoln District.
Stonewall District.
Union District.

DOMESTIC SERVICE:

27½c per 1,000 cubic feet; discount 2½c per 1,000 cubic feet.

Minimum monthly charge, 50c.

GILMER COUNTY.
Center District.

CALHOUN COUNTY.
Washington District.

DOMESTIC SERVICE:

35c per 1,000 cubic feet; discount 3c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RATES FOR DRILLING WELLS, PIPING OIL AND GAS, PUMPING OIL, ETC., SERVICE LINES FURNISHED BY THE CONSUMER.

RATES IN THE FOLLOWING SCHEDULE, WHEN BASED ON TOUR OF TWELVE HOURS OR LESS, ARE TO BE INCREASED WHEN GAS IS USED FOR MORE THAN TWELVE HOURS.

Pumping well with steam engine, each well per month, or fraction thereof $15.00

Pumping well with separate gas engines, each well per month, or fraction thereof 7.50

Pumping wells connected by shackle rods with gas engine:

First well per month, or fraction thereof 7.50

Each additional well on same power per month, or fraction thereof 2.00

Cleaning out well with steam engine, per hour 12 hours or less 1.00

Cleaning out well with gas engine, per tour 12 hours or less 1.50

Tubing well with steam engine, per tour 12 hours or less 3.50

Tubing well with gas engine, per tour 12 hours or less 2.00

Pulling rods with steam engine, per tour 12 hours or less 3.50

Pulling rods with gas engine, per tour 12 hours or less 2.00

NOTE.—No charge for tubing well or pulling rods when charge for pumping is made against the well at the monthly rate of $15.50 for pumping with steam engine, or $7.50 monthly for pumping with gas engine.

Pulling casing with steam engine, per tour 12 hours or less 3.50

Pulling casing with gas engine, per tour 12 hours or less 2.00

Steaming oil per tank, 100 bbls or less 1.00

Steaming oil, per tank of more than 100 bbls and not more than 250 bbls 1.75

Steaming oil, tankage in excess of 250 bbls at 6¾ per 100 bbls 6¾ 2.3

Pumping oil with steam per tank, 100 bbls or less 1.50

Pumping oil with steam per tank of more than 100 bbls and not more than 250 bbls 2.25

Pumping oil with steam, tankage in excess of 250 bbls at 9m per 100 bbls 9m

Pumping water with steam per tank, 100 bbls or less 1.50

Pumping water with steam per tank of more than 100 bbls and not more than 250 bbls 2.25

Pumping water with steam, tankage in excess of 250 bbls at 9m per 100 bbls 9m

Jetting water with steam pressure, per tour 12 hours or less 2.25

DRILLING WELLS.

Drilling wells, including forge and three lawn lights, (Irwin lawn light or similar burner) per tour 12 hours or less	4.75
Drilling wells, including forge, (when electric lighting system is used) per tour 12 hours or less	4.25
Extra forge per day	.50
Extra lawn lights per month, each. (Irwin or similar burner)	15.00
Extra lawn lights per night, each. (Irwin or similar burner)	.50
Heating stoves with mixer, per month	7.50
Heating stoves with mixer, per day	.50
Boilers for drilling machine for water wells, per tour 12 hours or less	3.00
Pumping water for drilling wells for the total number days drilling, per day	1.00

WATER STATIONS.

Pumping water with steam, small Donkey pump not over 5½ inch cylinder, per tour 12 hours or less	2.00
Pumping water with steam, large Donkey pump not over 7 inch cylinder, per tour 12 hours or less	3.50
Pumping water with gas engine, 15 days to one month, per horse power	1.20
Pumping water with gas engine, less than 15 days, per horse power	.60

OIL PIPE LINE PUMPING STATIONS.

25c per 1,000 cubic feet; subject to a discount of 2c per 1,000 cubic feet for payment on or before the tenth day of the month following that in which the gas is consumed.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA.

Supplement No. 1.
To P. S. C. W. Va. No. 3

NITRO, West Virginia:

DOMESTIC SERVICE:

35c per 1,000 cubic feet; discount 3c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

35c per 1,000 cubic feet; discount 1c per 1,000 cubic feet.

Nitro Brick & Tile Co.

From April 1, 1921, to November 1, 1921,

25c per 1,000 cubic feet; no discount.

Issued: Effective:

UNITED FUEL GAS COMPANY,
By L. A. Seyffert,
Secretary & Treasurer.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA.

Supplement No. 2
To P. S. C. W. Va. No. 3

UNITED FUEL GAS COMPANY

In conformity to the decision and order of The Public Service Commission on the 28th day of April, 1922, upon the application of the undersigned in Case No. 1251, the following changes are hereby made in the schedule now filed as P. S. C. W. Va. No. 1:

1st. In all localities the rate shown on the existing schedule for public institutions, public buildings, churches, schools, hotels, etc., is hereby discontinued, and the domestic rate in force in the respective localities is substituted therefor.

2nd. In all localities where the existing schedule shows a rate for industrial or manufacturing purposes lower than the domestic rate at the same place, such industrial rate, for the lowest rate block, is hereby increased three (3) cents per thousand cubic feet above the existing rate; and in all cases where such increase in the lowest rate block renders the rate in that block equal to or greater than the existing rate in the preceding block, the last mentioned block or step is eliminated from the schedule and rate.

Issued May 1, 1922. Effective May 1, 1922.

UNITED FUEL GAS COMPANY,
By R. G. Atizer,
Vice-President.

UNIFORM RULES AND REGULATIONS GOVERNING DOMESTIC CONSUMERS

Adopted by Representatives of the West Virginia Natural Gas Association and the Chief Engineer of the Public Service Commission, October 13, 1915.

Approved by the Public Service Commission, October 14, 1915.

1. The Gas Company will furnish and install the following appliances and piping which remain its property, viz: The pipe between its gas main and the consumer's property line; a street connection stop cock and curb box, and a meter. The street connection stop cock will be installed at a convenient place between the property line and the curb, and that portion of the piping from main to street connection stop cock shall be known as the Gas Company's street connection.

2. The consumer hereby undertakes to furnish and lay the necessary pipe to make the connection from the consumer's property line to the place of consumption and to keep the service line from the street connection stop cock to the place of consumption in good repair, but the Gas Company shall pay the expense of any repairs to that portion of the service line between the street connection stop cock and the property line, but the consumer otherwise shall not make change in or interfere with said service line without the written consent of the Gas Company. The character and arrangement of the service line shall be subject to the approval of the Gas Company but the Gas Company shall not be responsible for or have any duty or obligation with respect to the same. In the installation of a service line the consumer must not install any tees or branch connections and must leave the trench

open and pipe uncovered until it is exhibited to the Gas Company's inspector free from such irregularities.

3. The consumer shall use all due care to prevent waste of gas. The responsibility of detection of defects and leaks on the consumer's premises and in the service line is upon the consumer and in case of failure or deficiency of gas, irregular supply, leakage, excessive pressure and other developments incident to handling gas under pressure, the consumer agrees to give immediate notice thereof to the Gas Company, and his failure to do so, should loss follow, shall be negligence.

4. The authorized agent of the Gas Company shall at all reasonable times have free access to the premises of the consumer with the right to shut off the gas and remove its property from the premises for any of the following reasons:

First: For repairs.

Second: For non-payment of any bill due under this or any previous contract.

Third: For fraudulent tampering with the meter or piping on the premises.

Fourth: Removal of the consumer from the premises.

Fifth: For selling or delivering gas to other occupants of the premises without the written permission of the gas company.

Sixth: For failure to make or increase an advance payment or deposit on the lawful demand of the Gas Company.

Seventh: Upon permanent exhaustion of the supply.

Eighth: For leakage or waste of gas from consumer's piping.

Ninth: For failure to comply with these rules and regulations or for the violation of any of them.

5. The Gas Company may, as provided by law, require a deposit or guarantee or advance payment, or such an increase in such deposit or guarantee or advance payment for gas to be supplied, and may apply such deposits to

bills previously incurred by the consumer under this or previous contracts with the Gas Company.

6. The Gas Company does not guarantee or undertake to furnish a sufficient supply of gas at all times and shall not be liable for failure to do so, beyond its available supply; nor shall it be liable for any injury to person or property from any cause arising inside the street connection stop cock not the result of the negligence of the Gas Company; nor shall it be liable for any injury to person or property arising from the use of gas, by, or the supply of gas to, the consumer which is not the result of negligence on the part of the gas company.

7. This contract is not transferable.

Consumers must make application in person at the office of the Gas Company at the time they commence the use of gas, or they will be held responsible for the back charges against the premises.

8. Whenever gas shall be turned off or meter disconnected by reason of non-compliance with the gas company's rules, an extra charge of one dollar ($1.00) must be paid at the Gas Office before the gas shall be turned on again.

9. In case an execution shall be issued against the consumer or in case the consumer's premises or the personal property upon said premises shall be levied upon, under attachment or execution, or in case of assignment or other acts of insolvency of the consumer, the Gas Company may terminate the contract and all claims for gas previously delivered shall become forthwith due and payable.

10. No discount for prompt payment of bills shall be allowed unless all previous just bills have been paid in full and the current bill is paid within the discount period specified on the bill.

11. The rules and regulations of the Gas Company are subject to additions and changes by the company and such

additions and changes become a part of any contract between the Gas Company and a consumer if lawful under the rules of the Public Service Commission of West Virginia or the laws governing said Commission.

ADDITIONAL RULES FOR CONSUMERS ON HIGH PRESSURE MAIN AND FIELD LINES NOT ON LOW PRESSURE SYSTEMS.

(Approved by the Commission Dec. 4, 1915.)

RULE NO. 12.

The place of delivery of the gas is at the tap on the Company's pipe line. The consumer has knowledge that the gas pressure in the Company's pipe line varies from time to time even to the extent of the sudden and entire failure of gas, and the subsequent return of the supply at uncertain hours of the day and night, and that in the regular operation of its lines for the delivery of gas to cities and towns where low pressure systems are maintained, the Gas Company cannot give notice to scattered consumers in the country districts of these changes in supply and pressure. The consumer hereby assumes the duty of regulating the flow and pressure of gas into his service line by appliances thereon, and by the necessary labor, care and supervision of the same, so that he may safely conduct said gas over his premises, and safely distribute and use it. The consumer undertakes to shut off all fires when there is no one at the residence to look after them, and assumes the responsibility of attending to his gas burning and pressure-regulating appliances at all times and under all conditions; the consumer also assumes all risks from variations in pressure caused by the use and operation of compressors; from defects in pipe connections and appliances; from the escape and leakage of gas; from the sticking of valves and regulators, and from any and all causes incident to the handling and burning of gas on

said premises, and hereby waives notice of all changes of pressure and supply.

RULE NO. 13.

The consumer will furnish and install all necessary service line to transport the gas from the Company's main to the point of consumption, and in order to secure safe and adequate service, will furnish the necessary regulators and safety appliances, required to reduce the pressure from the maximum pressure on the Company's main to eight (8) ounces. The type and number of said regulators and safety appliances, and their installation, to be subject to the approval of the Gas Company before gas will be turned into the consumer's pipes. The information necessary to determine the number of regulators and safety appliances required, will be furnished to the consumer by the Company upon application. The Company will tap its main, provide and install a nipple and stop cock to turn on and shut off the gas from the consumer's service line.

The regulator or regulators, will be installed by the consumer at the tap on the Company's line, and a safety blow-off valve, or a fluid seal, will be installed by the consumer at the outlet of the meter, so adjusted as to operate and relieve any pressure on the consumer's line over sixteen (16) ounces. The Company will furnish the regulators and appliances required, and install same at the expense of the consumer, if he so desires.

The meter furnished by the Company will be attached to the consumer's service line at the outlet of the low pressure regulator. Around the regulator or regulators, and the meter, the consumer will provide and install a substantial covering to properly protect them from the weather, and from being interfered with by irresponsible parties. Said covering to be furnished and maintained by the consumer, but the Company, by its proper representative, shall have access to the meter and regulator at all times for the purpose of reading the meter, and mak-

ing such inspections as it reasonably can, to ascertain if the meter, regulator and appliances are in proper working condition.

The consumer shall not interfere with said regulators or meters, except to see that they are kept in proper working order; neither will he increase the pressure on same without the written approval of the Gas Company, and such interference will be sufficient cause for the discontinuance of service. If, for any reason, additional pressure is necessary, arrangement for the same must be made with the Company.

RULE NO. 14.

The line from which the gas is supplied by the Company, is not intended and cannot be maintained solely for service to scattered consumers in country districts, and the Company may, at its own discretion, cease to furnish gas, either temporarily or permanently, change, repair or remove its pipe line or change the use of it, without prejudice to the right of the Company to continue its supply to other consumers. In case of cancellation of this contract, 30 days' written notice shall be given by the one cancelling to the other party. The Company shall not be liable for any deficiency in the supply caused by the use of compressing stations, breakage of lines, or other causes, or for any claim for damages on account of anything done under the provisions of this paragraph.

RULE NO. 15.

Where gas is furnished for drilling and pumping wells, and uses other than domestic consumption, the applicant agrees to use such gas under this contract, as his exclusive fuel on said premises for said purposes until this contract is terminated, and agrees to provide and install such regulators and appliances as may be necessary to control the pressure, and use the gas with safety and economy, as provided in Rule 13.

RULE NO. 16.

The Company may, at its option, read the meter quarterly instead of monthly, and require the consumer to make sufficient deposit, or give adequate guarantee as security, for that period; payment for gas in such case, shall be due within ten days after date of bill rendered, which date of payment will be approximately the 10th day of the month following the end of the quarter year.

EXHIBIT "B"

P. S. C. W. VA. No. 4.

Supersedes All Preceding Schedules

UNITED FUEL GAS COMPANY

(INCORPORATED)

NATURAL GAS

PRINCIPAL OFFICE:
CHARLESTON, WEST VIRGINIA

ISSUED APRIL 25, 1924 — EFFECTIVE MAY 31, 1924

APPLICABLE TO GAS SUPPLIED AFTER THE METER READINGS FOR THE MONTH OF MAY, 1924.

UNITED FUEL GAS COMPANY

Schedule of Rates for Natural Gas — Effective May 31, 1924.

WEST VIRGINIA

The following schedule shows all the rates charged or collected for gas supplied for any purpose, (except when sold to other gas companies) whether regularly or temporarily, and whether as a public service or otherwise, but this company has not undertaken or professed to supply natural gas to the public generally, or without special contract governing the same, except for use in and about dwelling houses, offices, stores, laundries, schools, church-

es, club houses, hospitals, hotels, and other public buildings of a similar character, and which uses of natural gas are commonly known and will be hereinafter referred to as "domestic purposes." Service to the class of consumers, which this company undertakes to supply generally in the localities hereinafter listed, includes the supplying of natural gas for cooking, and for heating and lighting dwelling houses, regardless of the appliances used by the consumer. It also includes the supplying of gas for use in offices, clubhouses, laundries, schools, churches, hospitals, stores, hotels, and other public buildings, but, at the option of such consumers, that part of the gas used by them for heating their boilers will be supplied, through a separate meter, at the lower rate hereinafter mentioned as the manufacturing rate, upon condition that the consumer enter into a special contract such as that hereinafter mentioned, as required of consumers for manufacturing purposes, agreeing to accept a service for such boilers subordinate to that furnished to dwelling houses, by substituting coal or other fuel for heating the same when the company may require its entire supply for the use of its domestic consumers, who are charged the regular domestic rate.

Service for domestic purposes is furnished, subject to the uniform rules and regulations hereinafter set forth, for premises adjacent to streets or highways on which low pressure lines are laid, at the localities hereinafter mentioned, to all persons making the formal written application therefor, prescribed by the company, and agreeing to be bound by said rules and regulations as part of the contract relation created between the applicant and the company upon the acceptance by the latter of such application.

In addition to the foregoing this company, as incidental to its public service, supplies natural gas to persons, firms and corporations under contracts, limited as to time and amount, for manufacturing purposes and for mining operations at the localities hereinafter mentioned, at what is

[illegible] in this schedule, the rate for "Manufacturing Service," but only upon express condition that the service for such purposes is subordinate to the service given to domestic consumers, and may be discontinued at such time or times as may be necessary, in the judgment of the gas company, for the adequate supply of domestic consumers; but this company does not profess to supply all applicants for gas for such purposes, nor to be a public servant as to such service.

Gas furnished for use in gas engines is charged for at the rate for manufacturing service, provided such gas engines constitute part of the operating equipment of a factory in which gas is, at the same time, supplied for boilers, or furnaces in which fuel other than gas can be readily substituted; and provided further, that the said gas engines are not used or operated when the supply of gas to discontinued at other parts of the factory for the benefit of domestic consumers. If gas is furnished for use in gas engines under different circumstances than those above mentioned, it is charged for at the domestic rate.

[illegible]

[illegible]

[illegible]:

For the first [illegible] cubic feet, [illegible] per [illegible] cubic feet.

Minimum monthly charge, [illegible].

[illegible] [illegible], [illegible] [illegible], [illegible] [illegible] [illegible]

[illegible]:

For the first [illegible] cubic feet, [illegible] per [illegible] cubic feet.

Minimum monthly charge, [illegible].

[illegible]

[illegible]:

For the first [illegible] cubic feet, [illegible] per [illegible] cubic feet.

Minimum monthly charge, [illegible].

[illegible]:

[illegible] SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 125,000 cubic feet each calendar month 30c per 1,000 cubic feet.

(A) Second 125,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 250,000 cubic feet each calendar month 28c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

[illegible]:

[illegible] SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

[illegible]:

[illegible] SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

[illegible]:

[illegible] SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

[illegible], [illegible] [illegible], [illegible] COUNTY:

[illegible] SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CEDAR GROVE:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CEDARVILLE:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CERRO:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CHARLESTON:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 30c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 28c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

Manufacturing service rate applies to State Buildings and Public Schools.

CHELYAN:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CHERRY TREE BOTTOM:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CLENDENIN:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

CHURCHES:

12½c per 1,000 cubic feet. Rate provided for in franchise.

STREET LIGHTS:

25c per month for each one-mantle lamp.

25c per month for each additional mantle.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

COALBURG:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

CULLODEN:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

EAST BANK:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

EAST LYNN:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

ELK VIEW:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

FORT GAY:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

GAY:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

HUNT:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

HUNTINGTON:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

HURRICANE:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

STREET LAMPS:

25c per lamp, per month. Rate provided for in franchise.

JORDAN CREEK:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

KANAWHA CITY:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

KENOVA:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

KERMIT:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

KING:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

KYGER:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

LOCK SEVEN:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

LOGAN:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

McCLANAHAN:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MILLIKEN:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

NEWTON:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

NITRO:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

ONA:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

POCA:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

QUICK:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RAVENSWOOD:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

REEDY:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

STREET LIGHTS:

50c per light per month.

RICH CREEK:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RIPLEY:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

STREET LIGHTS:

50c per light per month.

SANDYVILLE:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

SILVERTON:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

SISSONVILLE:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

SPENCER:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.
All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.
Discount 1c per 1,000 cubic feet.

STREET LIGHTS:
City of Spencer, $2.50 per light per year.
Private consumer, 50c per light per month.

STOFFLE:
DOMESTIC SERVICE:
(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.
Minimum monthly charge, 50c.

THREE MILE:
DOMESTIC SERVICE:
(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.
Minimum monthly charge, 50c.

WALGROVE:
DOMESTIC SERVICE:
(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.
Minimum monthly charge, 50c.

WALTON:
DOMESTIC SERVICE:
(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.
Minimum monthly charge, 50c.

WILLIAMSON:
DOMESTIC SERVICE:
(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.
Minimum monthly charge, 50c.

MANUFACTURING SERVICE:

First 150,000 cubic feet each calendar month 39c per 1,000 cubic feet.

(A) Second 150,000 cubic feet each calendar month 32c per 1,000 cubic feet.

All over 300,000 cubic feet each calendar month 24c per 1,000 cubic feet.

Discount 1c per 1,000 cubic feet.

WILSON HOLLOW, CHARLESTON DISTRICT, KANAWHA COUNTY:

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RURAL DISTRICTS—Convenient to present lines in localities not listed above and not connected with any low pressure distributing plant.

CABELL COUNTY.
- Barboursville District.
- Grant District.
- Guyandotte District.

LINCOLN COUNTY.
- Carroll District.
- Duval District.

ROANE COUNTY.
- Curtis District.
- Geary District.
- Harper District.
- Reedy District.
- Smithfield District.
- Spencer District.
- Walton District.

KANAWHA COUNTY.
- Big Sandy District.
- Cabin Creek District.
- Charleston District.
- Elk District.
- Jefferson District.
- Malden District.
- Poca District.
- Union District.

PUTNAM COUNTY.
- Curry District.
- Scott District.
- Teays Valley District.

WAYNE COUNTY.
- Ceredo District.

JACKSON COUNTY.
- Ravenswood District.
- Ripley District.
- Washington District.

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RURAL DISTRICTS (Continued).

BOONE COUNTY.
Washington District.

MINGO COUNTY.
Hardee District.
Harvey District.
Lee District.
Warfield District.

LOGAN COUNTY.
Chapmansville District.

WAYNE COUNTY.
Butler District.
Lincoln District.
Stonewall District.
Union District.

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

GILMER COUNTY.
Center District.

CALHOUN COUNTY.
Washington District.

DOMESTIC SERVICE:

(A) 40c per 1,000 cubic feet; discount 2c per 1,000 cubic feet.

Minimum monthly charge, 50c.

RATES FOR DRILLING WELLS, PRODUCING OIL AND GAS, PUMPING OIL, ETC., SERVICE LINES FURNISHED BY THE CONSUMER.

RATES IN THE FOLLOWING SCHEDULE, WHEN BASED ON TOUR OF TWELVE HOURS OR LESS, ARE TO BE DOUBLED WHEN GAS IS USED FOR MORE THAN TWELVE HOURS.

Pumping well with steam engine, each well per month, or fraction thereof $15.50

Pumping well with separate gas engines, each well per month, or fraction thereof 7.50

Pumping wells connected by shackle work with gas engine:	
First well per month, or fraction thereof	7.50
Each additional well on same power per month, or fraction thereof	3.00
Cleaning out well with steam engine, per tour 12 hours or less	4.00
Cleaning out well with gas engine, per tour 12 hours or less	1.50
Tubing well with steam engine, per tour 12 hours or less	3.50
Tubing well with gas engine, per tour 12 hours or less	2.00
Pulling rods with steam engine, per tour 12 hours or less	3.50
Pulling rods with gas engine, per tour 12 hours or less	2.00
NOTE.—No charge for tubing well or pulling rods when charge for pumping is made against the well at the monthly rate of $15.50 for pumping with steam engine, or $7.50 monthly for pumping with gas engine.	
Pulling casing with steam engine, per tour 12 hours or less	3.50
Pulling casing with gas engine, per tour 12 hours or less	2.00
Steaming oil per tank, 100 bbls. or less	1.00
Steaming oil, per tank of more than 100 bbls. and not more than 250 bbls.	1.75
Steaming oil, tankage in excess of 250 bbls. at 66 2/3c per 100 bbls.	66 2/3
Pumping oil with steam per tank, 100 bbls. or less	1.50
Pumping oil with steam per tank of more than 100 bbls. and not more than 250 bbls.	2.25
Pumping oil with steam, tankage in excess of 250 bbls. at 90c per 100 bbls.	90

Plunging valve with stroke per hand, 100 kilos. or less 1.50

Plunging valve with stroke per hand of more than 100 kilos. and not more than 250 kilos. 2.25

Plunging valve with stroke, horsepower to exceed of 250 kilos. or less per 100 kilos. ..... .60

Jetting valve with stroke pressure, per hose 12 hours or less 2.25

DRILLING WELLS

Drilling wells, including fuse and three hour lights, (Drain hose light or similar burner) per hose 12 hours or less 6.75

Drilling wells, including fuse, (where electric lighting system is used) per hose 12 hours or less 6.75

Extra fuse per day ..... .30

Extra hose lights per month, each. (Drain or similar burner) 12.00

Extra hose lights per night, each. (Drain or electric burner) ..... .50

Blasting stone with dynamite per pound 1.50

Blasting stone with dynamite, per day ..... .50

Boilers for drilling machine for water wells, per hose 12 hours or less 4.00

Plunging valve for drilling wells for the usual machine hose drilling, per day 2.00

WATER WELLS

Plunging valve with stroke, small Standard pump not over 3½ inch cylinder, per hose 12 hours or less 3.00

Plunging valve with stroke, large Standard pump not over 7 inch cylinder, per hose 12 hours or less 2.50

Plunging valve with gas engine, 12 horse to one thousand, per horse power 2.25

Plunging valve with gas engine, less than 12 horse, per horse power ..... .60

(A.) We pay [illegible] cubic feet; subject to a discount of [illegible] per 1,000 cubic feet for payment on or before the tenth day of the month following that in which the gas is consumed.

UNIFORM RULES AND REGULATIONS GOVERNING DOMESTIC CONSUMERS

Adopted by Representatives of the West Virginia Natural Gas Association and the Chief Engineer of the Public Service Commission, October 13, 1915.

Approved by the Public Service Commission, October 14, 1915.

1. The Gas Company will furnish and install the following appliances and piping which remain its property, viz: The pipe between its gas main and the consumer's property line; a street connection stop cock and curb box, and a meter. The street connection stop cock will be installed at a convenient place between the property line and the curb, and that portion of the piping from main to street connection stop cock shall be known as the Gas Company's street connection.

2. The consumer hereby undertakes to furnish and lay the necessary pipe to make the connection from the consumer's property line to the place of consumption and to keep the service line from the street connection stop cock to the place of consumption in good repair, but the Gas Company shall pay the expense of any repairs to that portion of the service line between the street connection stop cock and the property line, but the consumer otherwise shall not make change in or interfere with said service line without the written consent of the Gas Company. The character and arrangement of the service line shall be subject to the approval of the Gas Company but the Gas Company shall not be responsible for or have any duty or obligation with respect to the same. In the installation of a service line the consumer must not install

any tees or branch connections and must leave the trench open and pipe uncovered until it is exhibited to the Gas Company's inspector free from such irregularities.

3. The consumer shall use all due care to prevent waste of gas. The responsibility of detection of defects and leaks on the consumer's premises and in the service line is upon the consumer and in case of failure or deficiency of gas, irregular supply, leakage, excessive pressure and other developments incident to handling gas under pressure, the consumer agrees to give immediate notice thereof to the Gas Company, and his failure to do so, should loss follow, shall be negligence.

4. The authorized agent of the Gas Company shall at all reasonable times have free access to the premises of the consumer with the right to shut off the gas and remove its property from the premises for any of the following reasons:

First: For repairs.

Second: For non-payment of any bill due under this or any previous contract.

Third: For fraudulent tampering with the meter or piping on the premises.

Fourth: Removal of the consumer from the premises.

Fifth: For selling or delivering gas to other occupants of the premises without the written permission of the gas company.

Sixth: For failure to make or increase an advance payment or deposit on the lawful demand of the Gas Company.

Seventh: Upon permanent exhaustion of the supply.

Eighth: For leakage or waste of gas from consumer's piping.

Ninth: For failure to comply with these rules and regulations or for the violation of any of them.

5. The Gas Company may, as provided by law, require a deposit or guarantee or advance payment, or such an increase in such deposit or guarantee or advance payment

for gas to be supplied, and may apply such deposits to bills previously incurred by the consumer under this or previous contracts with the Gas Company.

6. The Gas Company does not guarantee or undertake to furnish a sufficient supply of gas at all times and shall not be liable for failure to do so, beyond its available supply; nor shall it be liable for any injury to person or property from any cause arising inside the street connection stop cock not the result of the negligence of the Gas Company; nor shall it be liable for any injury to person or property arising from the use of gas, by, or the supply of gas to, the consumer which is not the result of negligence on the part of the gas company.

7. This contract is not transferable.

Consumers must make application in person at the office of the Gas Company at the time they commence the use of gas, or they will be held responsible for the back charges against the premises.

8. Whenever gas shall be turned off or meter disconnected by reason of non-compliance with the gas company's rules, an extra charge of one dollar ($1.00) must be paid at the Gas Office before the gas shall be turned on again.

9. In case an execution shall be issued against the consumer or in case the consumer's premises or the personal property upon said premises shall be levied upon, under attachment or execution, or in case of assignment or other acts of insolvency of the consumer, the Gas Company may terminate the contract and all claims for gas previously delivered shall become forthwith due and payable.

10. No discount for prompt payment of bills shall be allowed unless all previous just bills have been paid in full and the current bill is paid within the discount period specified on the bill.

11. The rules and regulations of the Gas Company are

subect to additions and changes by the company and such additions and changes become a part of any contract between the Gas Company and a consumer if lawful under the rules of the Public Service Commission of West Virginia or the laws governing said Commission.

ADDITIONAL RULES FOR CONSUMERS ON HIGH PRESSURE MAIN AND FIELD LINES NOT ON LOW PRESSURE SYSTEMS.

(Approved by the Commission Dec. 4, 1915.)

RULE NO. 12.

The place of delivery of the gas is at the tap on the Company's pipe line. The consumer has knowledge that the gas pressure in the Company's pipe line varies from time to time even to the extent of the sudden and entire failure of gas, and the subsequent return of the supply at uncertain hours of the day and night, and that in the regular operation of its lines for the delivery of gas to cities and towns where low pressure systems are maintained, the Gas Company cannot give notice to scattered consumers in the country districts of these changes in supply and pressure. The consumer hereby assumes the duty of regulating the flow and pressure of gas into his service line by appliances thereon, and by the necessary labor, care and supervision of the same, so that he may safely conduct said gas over his premises, and safely distribute and use it. The consumer undertakes to shut off all fires when there is no one at the residence to look after them, and assumes the responsibility of attending to his gas-burning and pressure-regulating appliances at all times and under all conditions; the consumer also assumes all risks from variations in pressure caused by the use and operation of compressors; from defects in pipe connections and appliances; from the escape and leakage of gas; from the sticking of valves and regulators, and from any and all causes incident to the handling and burning of gas on

said premises, and hereby waives notice of all changes of pressure and supply.

RULE NO. 13.

The consumer will furnish and install all necessary service line to transport the gas from the Company's main to the point of consumption, and in order to secure safe and adequate service, will furnish the necessary regulators and safety appliances, required to reduce the pressure from the maximum pressure on the Company's main to eight (8) ounces. The type and number of said regulators and safety appliances, and their installation, to be subject to the approval of the Gas Company before gas will be turned into the consumer's pipes. The information necessary to determine the number of regulators and safety appliances required, will be furnished to the consumer by the Company upon application. The Company will tap its main, provide and install a nipple and stop cock to turn on and shut off the gas from the consumer's service line.

The regulator or regulators, will be installed by the consumer at the tap on the Company's line, and a safety blow-off valve, or a fluid seal, will be installed by the consumer at the outlet of the meter, so adjusted as to operate and relieve any pressure on the consumer's line over sixteen (16) ounces. The Company will furnish the regulators and appliances required, and install same at the expense of the consumer, if he so desires.

The meter furnished by the Company will be attached to the consumer's service line at the outlet of the low pressure regulator. Around the regulator or regulators, and the meter, the consumer will provide and install a substantial covering to properly protect them from the weather, and from being interfered with by irresponsible parties. Said covering to be furnished and maintained by the consumer, but the Company, by its proper representative, shall have access to the meter and regulator at all times for the purpose of reading the meter, and mak-

ing such inspections as it reasonably can, to ascertain if the meter, regulator and appliances are in proper working condition.

The consumer shall not interfere with said regulators or meters, except to see that they are kept in proper working order; neither will he increase the pressure on same without the written approval of the Gas Company, and such interference will be sufficient cause for the discontinuance of service. If, for any reason, additional pressure is necessary, arrangement for the same must be made with the Company.

RULE NO. 14.

The line from which the gas is supplied by the Company, is not intended and cannot be maintained solely for service to scattered consumers in country districts, and the Company may, at its own discretion, cease to furnish gas, either temporarily or permanently, change, repair or remove its pipe line or change the use of it, without prejudice to the right of the Company to continue its supply to other consumers. In case of cancellation of this contract, 30 days' written notice shall be given by the one cancelling to the other party. The Company shall not be liable for any deficiency in the supply caused by the use of compressing stations, breakage of lines, or other causes, or for any claim for damages on account of anything done under the provisions of this paragraph.

RULE NO. 15.

Where gas is furnished for drilling and pumping wells, and uses other than domestic consumption, the applicant agrees to use such gas under this contract, as his exclusive fuel on said premises for said purposes until this contract is terminated, and agrees to provide and install such regulators and appliances as may be necessary to control the pressure, and use the gas with safety and economy, as provided in Rule 13.

RULE NO. 16.

The Company may, at its option, read the meter quarterly instead of monthly, and require the consumer to make sufficient deposit, or give adequate guarantee as security, for that period; payment for gas in such case, shall be due within ten days after date of bill rendered, which date of payment will be approximately the 10th day of the month following the end of the quarter year.

Exhibit P. S. C. Opinions

THE PUBLIC SERVICE COMMISSION

OF

WEST VIRGINIA

CAPITOL BUILDING, CHARLESTON.

Case No. 1516.

In re: United Fuel Gas Company,
Investigation and Suspension of P. S. C. W. Va. No. 4, prescribing rates for natural gas to its consumers within the State of West Virginia.

Submitted February 25, 1925. Decided March 24, 1925.

APPEARANCES:

For the United Fuel Gas Company, R. G. Altizer and Harold A. Ritz, Charleston, West Virginia.

For the Protestants: City of Charleston, H. D. Rummel; City of Huntington, C. W. Strickling and Paul W. Scott; Town of Ripley and Town of Ravenswood, Clyde B. Johnson and T. J. Sayre; Manufacturers Club of Huntington, West Virginia, George S. Wallace; Industrial Gas Consumers of Charleston and vicinity, including, Dunkirk Window Glass Company, Westvaco Chlorine Products Company, West Virginia Brick Company, Standard Brick and Supply Company, Ward Engineering Works, Kanawha

Brick Company, Kanawha Manufacturing Company, Kanawha Ice Company, Diamond Ice & Coal Company, Elite Laundry Company, Superior Laundry Company, Charleston Laundry Company, Kanawha Woolen Mills Company and Charleston Lumber Company, by Price, Smith & Spilman.

STATHERS, CHAIRMAN:

On the 26th day of April, 1924, the United Fuel Gas Company, hereinafter called the Gas Company, filed with the Public Service Commission its tariff or schedule of rates for natural gas, effective May 31, 1924, increasing its then existing rates for natural gas supplied by it to its consumers within the State of West Virginia, the said tariff or schedule of rates being designated "P. S. C. W. Va. No. 4." By an order entered on said 26th day of April, 1924, the operation of said tariff or schedule and the effective date thereof was postponed and suspended until the 22nd day of August, 1924, and the initial hearing for the purpose of inquiring into the said tariff or schedule set down at the offices of the Commission on the 28th day of May, 1924, the Gas Company being required to give full notice of such hearing in the manner detailed in said order. The taking of evidence was begun on said 28th day of May, 1924, and continued and held from time to time until the 23rd day of January, 1925. Following the said suspension order of April 26th, 1924, the Commission needed additional time for a full hearing and investigation of the matters embraced in this proceeding and for the rendering of a final decision, suspended and postponed the effective date of said tariff or schedule, as the necessity for such suspension and postponement appeared, the last suspension order being entered on the 18th day of February, 1925, whereby the effective date and operation of said tariff or schedule was further suspended and postponed until the 25th day of March, 1925. Other

than the said tariff or schedule "P. S. C. W. Va. No. 4" no petition, answer or other form of application or protest was filed, the proceeding being heard upon the said tariff or schedule only. On the day of the initial hearing the Gas Company moved that this proceeding and its Case No. 1251 be consolidated, which motion was resisted by the protestants. On a later day the protestants joined in said motion, which was granted by the Commission; whereupon the two proceedings were consolidated and heard together. Following the close of the taking of testimony on said 23rd day of January, 1925, briefs were filed by counsel for the Gas Company and counsel for the protestants, the last of such briefs being presented on the 25th day of February, 1925.

While this is the first proceeding instituted by this company upon the mere filing of a tariff or schedule of rates, as permitted by statute, yet this company has filed applications seeking the authority of this Commission to increase its natural gas rates. These applications are known as Case No. 482, decided December 7th, 1916; Case No. 585, decided February 28th, 1918; Case No. 845, decided December 19th, 1919, and Case No. 1251, decided April 28th, 1922. The first three cases are reported in Volume I—Decisions—Public Service Commission of West Virginia, at pages 238, 501, and 651, respectively. Case No. 1251 is reported in Bulletin No. 70. This last mentioned Case No. 1251 was heard a second time following a motion of the Gas Company made after the filing of a report required by the Commission in the order entered by it in the original hearing, on April 28th, 1922. The report of this second proceeding appears in Bulletin No. 82. From the findings of the Commission as set out in said Bulletin No. 82 the cities of Charleston, Williamson, Kenova, Spencer and Logan and other protestants appealed to the Supreme Court of Appeals of West Virginia, the proceeding in that court being entitled City of Charleston, et al. vs. The Public Service Commission of West Virginia, et al. This appeal was decided by said

Supreme Court on November 27th, 1923, the said findings and order of the Commission being reversed and set aside and the proceeding remanded to the Commission "for such further investigation and order as may be proper." Upon the case coming back here no action was taken therein until after the filing of said tariff on schedule on April 26th, 1924, in this case, and the first day of the initial hearing when, on hereinbefore stated, counsel for the Gas Company moved a consolidation of said Case No. 1251 and this Case No. 1106, which motion on a later day was granted, and, accordingly thereto, the proceedings here have been heard together and the findings and order herein are made upon the record in said Case No. 1251 and the record in this particular proceeding.

No questions have been raised or presented which were not considered by the Commission in said Case No. 1251, and other than a more elaborate development of the matters and questions considered by the Commission in said case, and bringing down all matters to a recent date, the facts are the same as those embodied in the last decision of said Case No. 1251 (Bulletin No. 9). And as those facts, as well as a full history of the Gas Company, are set out in the said opinion and reports to which reference has been made, particularly in the said two bulletins covering said Case No. 1251 and the said opinion of the Supreme Court of Appeals, for the sake of brevity and in order to keep this opinion within reasonable limitations, no special analysis of the facts of the history of the company will be made. However, both the history of the company and matters of evidence will be developed to an extent sufficient for an understanding of the Commission's findings upon the questions presented.

Under this consolidation record the questions with which we are concerned, most of them being the same questions passed upon in the said two hearings of said Case No. 1251 and upon said appeal and submitted upon here, are:

I. What is the present fair value of the Gas Corporation's property?

And in arriving at the proper answer to this question,—

What value should be given to the gas contracts, franchise or the prevailing tendency of the Gas Company?

II. How much of the Gas Company's property has been retired or abandoned, and what allowance on account thereof must be allowed for the future?

III. What depreciation and depletion rate, either or both, must be allowed?

IV. What is a fair return on the present fair value of the Gas Company's property?

V. What income, if any, from the gasoline business operated by the Virginian Gasoline & Oil Company, a subsidiary of the Gas Company, should be credited and allowed to the business of the Gas Company?

VI. What weight, if any, should be given to "the cost of the service"?

VII. What is the annual revenue and annual expenses of the Gas Company, including what interest or income, if any, the Gas Company should be charged with receiving from the notes of, or to the power companies?

VIII. Are the rates fixed just and reasonable; if not, what are just and reasonable, including whether or not the existing rates are just and reasonable?

II

FINDINGS OF VALUATION

(a) Physical Property

In evaluating the property of the Gas Company to this end, the Commission is fortunate in having submitted to it the book cost, the estimated historical cost and the estimated reproduction cost of the property involved. Considering first the physical property only we find the

Uebelacker, Engineer, witness for the Gas Company, arrives at an estimated reproduction cost new of $37,054,425.00 as of December 31st, 1923. This estimate includes direct and general overhead charges as ascertained by Mr. Uebelacker, but it does not include "estimated value of leaseholds and natural gas rights," nor does it include working capital and going value; these items not being regarded as a part of the physical property. By what is known as "the observed depreciation method," involving a thorough investigation and inspection of the property as fully described by Mr. Uebelacker in his reports and testimony, Mr. Uebelacker estimates the reproduction cost, new, of this property, "less deterioration", as of December 31st, 1923, at $28,631,320.00. (U. Ex. No. 1, record 46-48.)

Mr. Hagenah, expert witness introduced by the protestants, in his testimony and "Hagenah Ex. No. 1" filed therewith, fixes the reproduction cost, new, of this same physical property as of the same date at $35,391,152.00, and he estimates the reproduction cost new, "less deterioration" (depreciation) at $23,969,180.00. (Hagenah Ex. No. 1, 1-2.)

From another exhibit filed with the testimony of Mr. Uebelacker, "U. Ex. No. 3," the same being the "Estimated Historical Cost" of all of the property of this company, as of the same date, that is December 31, 1923, we find Mr. Uebelacker's estimate of the historical cost of the physical property is $25,480,378.33. This estimate includes direct overheads and general overheads as used by Mr. Uebelacker in arriving at his reproduction cost estimates "with the exception that interest has been taken at 6% instead of 8% as used in the other report." ("U. Ex. No. 3", pp. 10-11-13.)

The book cost is thoroughly covered in the testimony of Mr. Jirgal, protestants' witness, and is clearly set out in the exhibits furnished by him. We find that the book cost of this property as of December 31st, 1923, is $19,945,582.16. (Jirgal Ex. No. 1, p. 13.)

The protestants, through their expert witness, Mr. Hagenah, attack the reproduction cost estimate of the Company's witness, Mr. Uebelacker, in three particulars, that is, depreciation, cost of financing and interest during construction, the latter two being included among the general overhead charges. As indicated herein, in arriving at the reproduction cost of the physical property, less depreciation, Mr. Uebelacker reaches the extent or amount of deterioration or depreciation through what is called the "observed depreciation method." Mr. Hagenah (Hagenah Ex. No. 1) disapproves of this method and in its place offers a combination of "the observed depreciation method" and "the amortization rule," explaining on page three of said exhibit in the following language:

> "In all cases where the normal life of the property will be cut short by the exhaustion of the gas reserves, the present condition has been ascertained by the application of the amortization rule; but in all other respects the facts as found by Ford, Bacon and Davis have been accepted."

It is clear that, in ascertaining the depreciation through his method, Mr. Uebelacker made a thorough inspection of the property and carefully observed its present condition. We are not unmindful of the fact that "the observed depreciation method" may have its shortcomings in that there may be certain parts of the property which are not visible to the eye and which cannot be inspected. Apparently realizing this, Mr. Uebelacker was unusually careful; it appearing from his testimony that the extent of the deterioration of the field lines, transmission lines and distribution lines was determined "from actual observation of pipe in place at points uncovered for the purpose of the inspection," and that, in addition to "a careful inspection" of the whole plant, he made "a review of all the records of the past operations of the engines and other property and of the records pertaining to the maintenance and general upkeep of the units." Mr. Hagenah would have us speculate as to what may be

come of this physical property when the gas fields with which it is connected are depleted and exhausted; he would have us assume that the cities of Charleston and Huntington "will be supplied by artificial gas plants" in connection with which "the present distribution system" may be used and he would have us indulge in further calculation concerning the physcial life of certain of the property and take care of depreciation therein through "the amortization rule." This theoretical procedure advocated by Mr. Hagenah must give way to the facts as found by Mr. Uebelacker. It is the present condition of the property with which we are concerned in arriving at its fair present value. The method of Mr. Uebelacker has the support of a recent decision of the United States Supreme Court in Pacific Gas and Electric Co. v. San Francisco, (U. S.) P. U. R. 1924 D, 817, wherein, speaking for the Court, Mr. Justice McReynolds says:

> "In order to determine accrued depreciation and ascertain true values during the years 1913-1916, the master applied the 'modified sinking fund method.' * * *
>
> Appellant objects to the application of this method, and insists that depreciation should have been ascertained upon full consideration of the definite testimony given by competent experts who examined the structural units, spoke concerning observed conditions, and made estimates therefrom. As these examinations were made subsequent to the alleged depreciation, for the definite purpose of ascertaining existing facts, we think the criticism is not without merit. Facts shown by reliable evidence were preferable to averages based upon assumed probabilities."

If there was any doubt as to what Mr. Uebelacker meant by "cost of financing" after he first testified in this case, that doubt was removed by him in "Uebelacker Exhibit No. A", as was also the matter of interest during construction. Further, other testimony in the record sustains Mr. Uebelacker in his figures as to cost of financing and interest during construction, both of which are al-

lowed and considered by the Commission in connection with Mr. Uebelacker's estimate of reproduction cost new of this property.

While no exception is taken thereto, we are of opinion that Mr. Uebelacker is in error in including in his estimated reproduction cost the cost of drilling "dry holes." As the value which we are seeking is the value of the used and useful property of this company in the service of the public, it follows that the only property which should be included in any estimate of reproduction cost should be that used and useful property. In this connection it must be remembered that in any operated plant and in this plant, the cost of "dry holes" is taken care of through operating expenses; such cost does not go to capital account. If a public utility furnishing water had drilled "a dry hole" in its search for water, could such "dry hole" be given a value in determining the present fair value of the property of such utility? If a reservoir had been abandoned by such water company, could this Commission include the cost of the abandoned reservoir, as well as the cost or value of the used reservoir, in its findings of the present fair value of the water company? Certainly not, and it has been so held frequently. The allowance for "dry holes" in the reproduction cost new, less depreciation, estimate of Mr. Uebelacker is $254,332.09; which sum is disallowed. While not so advanced here, yet we realize that the claim might be made that some value should be given to such "dry holes" because of the fact that they have had a certain use and been of some advantage to the Gas Company in defining its gas territory, but any such value as they may have in this respect should be, and is, included and considered as one of the elements of going concern value.

We are of opinion, also, that through the method used by Mr. Uebelacker in adding both direct overhead and general overhead charges to his estimate of reproduction cost new there may be an overlapping or duplication of certain overhead charges, yet the record shows no such

overlapping or duplication, the testimony being confined to Mr. Hagenah's statement that,—

> "The provision for overhead charges included in the appraisal is also excessive. Because of the substantial provision made for sundry items of overhead expenses in the unit cost the allowance for general overhead charges should not exceed 18%, and this provision is included in the attached summary."

This statement and similar statements by Mr. Hagenah, standing alone, are not sufficient to overthrow the testimony of Mr. Uebelacker and certain sustaining testimony in connection therewith offered by the Company; so that, upon the record, the Commission must allow these overhead charges as given by Mr. Uebelacker.

An unusual and marked difference exists between the book cost of the property here under discussion and the estimated historical cost, the book cost being $19,945,582.16 and the "estimated historical cost," as designated and fixed by Mr. Uebelacker, being $25,480,378.33, a difference of $5,534,796.17. In view of the fact that the greater part of this property was purchased, constructed and put into operation during the period of high prices, it would seem that there should not be so great a difference between the book cost and the historical cost. Looking for the reason for this difference, an examination of Mr. Uebelacker's report upon the estimated historical cost "U. Ex. No. 3," shows that in making up an estimate for the physical property "now in existence and installed prior to December 31, 1915," he took "prices representing the average of the ten year period, 1906 to 1915," and that "The cost of property installed since 1916 was determined from the records of the company, which showed the net cost of additions and retirements from December 31, 1915, to August 31, 1923," so that for the period of high prices the historical cost and the book cost are substantially the same, whereas from the period of 1906 to 1915 an average price is used. But a more substantial

and likely reason for this difference appears from the statement of Mr. Uebelacker that he used the same direct overheads "for the period of 1906 to 1915" as he used "in the reproduction valuation report as of December 31, 1923," and that the general overheads included are the same as those "described in detail" in the said valuation report, (U. Ex. No. 1) "with the exception that interest has been taken at 6% instead of 8% as used in the other report, (U. Ex. No. 3, pp. 1-10). Finding this to be the basis upon which Mr. Uebelacker made his historical cost estimate, necessarily we must reach the conclusion that his estimated historical cost more nearly represents the reproduction cost estimate than it does the book cost estimate. And here it should be added that the book records of this Company are complete and, so far as book costs are concerned, may be relied upon.

As indicated in the opening paragraph, there has been developed fully for the Commission estimates of the reproduction cost new and less depreciation, an estimate of the historical cost and the book cost of the property. Having these estimates and the book cost, the Commission is not dependent wholly upon any one of them as sometimes proves to be true. The Commission has before it for the years covering the life of the Gas Company, as represented by the book cost, and for the present, as represented by both the reproduction and the historical cost estimates, the prices and cost of material and labor during what is generally regarded as "the period of high prices." Likewise, it has before it the costs and prices prevailing prior and subsequent to such period. Giving consideration to the whole record, the Commission has had the benefit "of all relevant facts" and is in a position to find a value from such facts agreeable to the principles enunciated upon the subject of "present fair value" by our own Supreme Court of Appeals and by the United States Supreme Court and cases there cited:

Smythe v. Ames, 169 U. S. 466; 42 Law Ed. 819;

Willcox v. Consolidated Gas Co., 212 U. S. 19; 53 Law Ed. 382;

Simpson, et al. v. Shepard, (Minnesota Rate Cases) 230 U. S. 352; 57 Law Ed. 1511;

Bluefield Water Works, Etc., Co. v. P. S. C. of W. Va., 261 U. S. 579; 67 Law Ed. 1176;

Southwestern Bell Tel. Co., etc., v. P. S. C., 262 U. S. 276; 67 Law Ed. 981;

Georgia R. & P. Co., et al. v. Georgia R. R. Com., 262 U. S. 625; 67 Law Ed. 1144;

City of Charleston v. Public Service Commission, 95 W. Va. 91;

Natural Gas Company of W. Va. v. Public Service Com., 95 W. Va. 557.

We cannot find the reproduction cost estimates, new or less depreciation, as the present fair value of this property, in view of the book cost and said estimated historical cost and the evidence in connection therewith appearing in the record. The value we reach is below the said reproduction cost, less depreciation, estimate of Mr. Uebelacker, and above that of Mr. Hagenah, but we have given substantial consideration to these estimates. In supporting and sustaining our action in this respect, we cite the above cases; and, being particularly in point, we quote from the opinion in Georgia Railway and Power Co., et al. v. Railroad Commission, *supra*, wherein Mr. Justice Brandeis, speaking for the Court, says:

> "The refusal of the Commission and of the lower court to hold that, for rate-making purposes, the physical properties of a utility must be valued at the replacement cost less depreciation was clearly correct. As was said in Minnesota Rate Cases, 230 U. S. 352, 434, 57 Law Ed. 1511, 48 L. R. A. (N. S.) 1151, 33 Sup. Ct. Rep. 729, Ann. Cas. 1916A, 18: 'The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts.'

What these relevant facts are had been stated in Smythe v. Ames, 169 U. S. 466, 546, 547, 42 L. ed. 819, 19 Sup. Ct. Rep. 418:

'• • • the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, that which the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth.'

And in Willcox v. Consolidated Gas Co., 212 U. S. 19, 52, 53 L. ed. 382, 48 L. R. A. (N. S.) 1134, 29 Sup. Ct. Rep. 192, 15 Ann. Cas. 1034, it has been made clear 'that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase.'

The rule laid down in these cases was expressly recognized as controlling, both by the Commission and by the lower court. Evidence bearing on most of the facts there declared to be relevant facts was before them. The court states, and the record establishes, that 'the opinion of the • • • Commission • • • evinces a full and conscientious consideration of the evidence.' The opinion of the court shows that it also made careful examination of the evidence submitted and that it recognized the applicable rules of law. While it differed from the Commission in some matter of detail, it sustained the latter's finding that the value was

> $5,250,000. The question on which the court divided in the Southwestern Bell Telephone case, *supra*, is not involved here."

And, further, in another connection, Mr. Justice Brandeis says:

> "The case is unlike Missouri, *ex rel.* Southern Bell Teleph. Co. v. Public Service Commission, No. 158, decided May 21, 1923, (.... U. S. ....), P. U. R. 1923C, 193, ... L. ed. ...., ... Sup. Ct. Rep. ....). Here the Commission gave careful consideration to the cost of reproduction; but it refused to adopt reproduction cost as the measure of value. It declared that the exercise of a reasonable judgment as to the present 'fair value' required some consideration of reproduction cost as well as of original costs, but that 'present fair value' is not synonymous with 'present replacement cost,' particularly under abnormal conditions. That part of the rule which declares the utility entitled to the benefit of increases in the value of property was, however, specifically applied in the allowance of $125,000 made by the Commission to represent the appreciation in the value of the land owned. The lower court recognized that it must exercise an independent judgment in passing upon the evidence; and it gave careful consideration to replacement cost. But it likewise held that there was no rule which required that in valuing the physical property there must be 'slavish adherence to cost of reproduction less depreciation.' It discussed the fact that since 1914 large sums had been expended annually on the plant; that part of this additional construction had been done at prices higher than those which prevailed at the time of the rate hearing; and it concluded that 'averaging results and remembering that values are * * * matters of opinion * * * no constitutional wrong clearly appears.'"

And adhering to this view, our own Supreme Court recently in Natural Gas Company of West Virginia v. Public Service Commission, *supra*, through the opinion by Meredith, President, declared:

> "The Commission will give such weight to the reproduction new value, less depreciation, as it considers it entitled to, being guided at all times by the principle that the company is entitled to a fair rate upon the fair value of its property devoted to the public service."

And also,—

> "But as the Commission is not bound by any one method in ascertaining the fair value of a utility's property, neither is this court. It is the privilege as well as the duty of both to consider all available methods, all relevant facts, so as to arrive at a correct solution, to find what is fair to all."

Upon consideration the use to which this physical property is put, the book cost, the historical cost estimate, the reproduction cost new, less depreciation, estimates, the decisions of our own Supreme Court of Appeals and those of the United States Supreme Court upon the subject of "present fair value," and after a careful and painstaking examination of the record, this Commission is of opinion that the physical property of this company had a present fair value, as of December 31st, 1923, of $25,000,000.00.

Supplementing the estimates of Mr. Uebelacker and other testimony for the purpose of bringing the evidence upon the question of value down to the nearest possible date, at the hearing held on December 31st, 1924, Mr. Hightower, the Gas Company's Assistant Treasurer, was recalled and among other things asked to show "the increase in capital expenditures during the year 1924, up to the 30th of November of that year." (Record p. 886.) In answer to this question Mr. Hightower filed a statement, which appears in the record as "Exhibit Hightower 4-A." The testimony of Mr. Hightower and this statement disclosed an increase in capital expenditures for said period of $2,000,676.57. But of this $1,334,037.10 is in "incomplete construction," using the language of Mr. Hightower,—leaving $666,639.47 in completed construc-

tion. The evidence is meagre, indeed scant and unenlightening. The Commission is not informed as to when any of the property represented by the total amount was put into service, and is not given the least idea as to when the "incomplete construction", as designated by its said witness, will be devoted to the public use. Whether this incompleted work will be finished soon and then promptly put into operation or whether, when completed, there may be a delay of months in giving the consumers the benefit of its use, we are not told. Indeed we are required to assume that the property represented by the figures $666,639.47 is in service, but this is as far as we can go—upon the record, the evidence not showing completed constructoin to the extent of said sum of $2,000,676.57; but, on the contrary, showing only $666,639.47 of completed construction; and there being no evidence whatever as to when the property represented by these amounts was or may be put into the service of the public, we allow only the said sum of $666,639.47 as a part of the rate base. As we are considering here the physical plant, there must be deducted from this last mentioned amount the sum of $18,181.75, the same representing cost of "acreage" and to be added to the value of the leaseholds. Thus we reach the sum of $648,457.72. From all which we must conclude and find that the present fair value of the physical property of the Gas Company is $25,648,457.72.

(b) Leaseholds and Natural Gas Territory.

The Gas Company holds in fee and by contract or lease 814,910.68 acres of oil and natural gas territory. Of this 41,969.47 acres is owned in fee, the remainder is held under written contracts, referred to in the testimony as "leases." Mr. R. E. Davis, a consulting engineer, witness for the Gas Company, the same gentleman who testified in Case No. 1251, in undertaking to arrive at the gas reserve or gas content of this large acreage, made a study of the territory for the company beginning three

years ago. He has brought his results down to a recent date and filed with his testimony an exhibit entitled "Report Showing General Geological Description of Natural Gas Properties, Classification of Acreage and Estimated Gas Reserves as of December 31, 1923," being designated herein "Davis Exhibit No. 1." Giving the purpose of this report, Mr. Davis says:

> "The purpose of the work has been (1) to assemble all available data pertinent to a study of the gas reserve of the property held by each company; (2) to determine said reserve so far as it is possible to do so in the present partially developed and partially tested condition of a large part of the territory; (3) to classify the undeveloped acreage now held as to its gas possibliities; and (4) to outline areas which have been proven unfavorable for production in well-known sands. In the determination of the *gas reserves of the various parts of the territory* distinction is made between reserves which are considered proven and reserves which are considered probable. The proven reserves are those contained in areas which have been thoroughly tested and which are now producing gas. The probable reserves are those believed to be available in territory partially tested by wells or in territory which appears to be especially favorable for gas because of the geological conditions and the relation to known productive areas."
>
> (Davis Ex. No. 1, p. 1.)

Among other things, Mr. Davis classifies this property as "operated" 68,900.72 acres, "unoperated" 746,009.96 acres, as of December 31, 1923. He reports gas wells "owned and operated" as of the same date 796. He classifies the said acreage further as follows: "Proven acreage"—drilled, 114,784 acres, undrilled 21,600 acres, total 136,384 acres; "probable acreage" 126,208 acres, total proven and probable acreage 262,592 acres; "possible and unfavorable acreage" 552,318.68; total acreage 814,910.68 acres. And by methods and theories fully developed and explained, Mr. Davis estimates "the total proven gas re-

serve as of December 31, 1923, * * * as 249.41 billion cubic feet of gas, and the total probable acreage as of the same date * * * as 414.6 billion cubic feet of gas, making a total of 663.7 billion cubic feet of proven and probable gas reserve," and he fixes this amount as the gas content of said acreage; the amount of gas that may be recovered therefrom. (Davis Ex. No. 1, p. 27.)

It is upon this reserve acreage or "gas reserve" as estimated by Mr. Davis and used synonymously by him with "gas content," "recoverable gas" and "gas in the ground" that the Gas Company asks this Commission to place a value, urging "the market value" as "the present fair value." The protestants resist the claim of the Gas Company to a value other than a leasehold value and insist that the fair value on such basis is "the book cost" as found by their witness Jirgal. (Jirgal Ex. No. 1.)

After having testified in relation to the "gas reserve" underlying the said territory, Mr. Davis upon being recalled, offered in evidence a report designated "Appraisal of Natural Gas Property, December 31, 1923," marked "Davis Exhibit No. Z," in which he estimates a value upon the "gas reserves" found by him in his said other report, "Davis Exhibit No. 1," here finding for the particular purpose of this study a gas reserve of 636.1 billion cubic feet in the territory shown in his "Exhibit No. 1," instead of the 663.7 billion cubic feet set down in said "Davis Exhibit No. 1," explaining, in this connection, that he believed "it would take more than eighteen years for the United Fuel Gas Company to exhaust the amount of gas that can be produced." Proceeding upon what he calls "the assumption that the property of the United Fuel Gas Company might be used in whatever way is most advantageous to the owner of the property," Mr. Davis, considering "the Pittsburgh market where there is a large potential demand for natural gas" in the manufacture of steel and for other purposes, (Record, p. 70) placed a value on this "gas reserve" and "the equipment now in place * * * which could be used in serving the Pittsburgh

market" of $52,181,738.17. Upon the gas reserve alone he fixes a value of $32,458,129.17.

Mr. Davis allows no gas content or reserve for that territory embraced within his classification "possible and unfavorable acreage," the same amounting to 552,318.68 acres out of the said total of 814,910.68 acres. (Davis Ex. 1, pp. 26-27.) And while the Gas Company claims a market value for said "gas reserve" it does not clearly appear just what the claim is as to the said remaining territory so classified by Mr. Davis as "possible and unfavorable." However, Mr. Uebelacker in his testimony and "U. Ex. No. 1" filed therewith, sets up a value of $3,293,754.00, giving this explanation,—

> "Valuation of unproven acreage—The total acreage in this classification is taken from Mr. Davis' report. The value at which it has been included herein is the average bonus or investment charge per acre incurred by the company in the year 1923 in the acquisition of the unproven acreage which it acquired during that year. This is taken as the measure of the value of this acreage as it represents bona fide transactions in the acquisition of such leaseholds."

From this it will be observed that Mr. Uebelacker has not endeavored through investigation of values in the neighborhood in which these leaseholds are located to make any estimate of market value of such leaseholds, and no other witnesses of the Gas Company have given this acreage any valuation. (U. Ex. No. 1, p. 45.) Taking as true the gas content or gas reserve of 663.7 billion cubic feet estimated by Mr. Davis, Mr. Uebelacker gives the "total value of proven and probable acreage" as $33,155,421.55. (U. Ex. No. 1, p. 46.) It is unnecessary here to go into detail as to Mr. Uebelacker's method of arriving at the value of this reserve, as such value is based entirely upon Mr. Davis' calculation, and of course for that reason must stand or fall upon the acceptance or rejection of Mr. Davis' figures.

As hereinbefore indicated, Mr. Davis testified in Case No. 1251. His testimony was not accorded any weight by the Commission, and the Supreme Court of Appeals, in referring to it, said:

> "There is some evidence in the record given by Mr. Ralph E. Davis, an engineer, tending to show the amount of gas that may be produced from the company's present wells and also the amount of gas that may be produced from what he calls its 'proven' territory. By his testimony the company seeks to estimate the gas now held by it, both in the 'operated' and in the 'unoperated' but 'proven' territory, aggregating from 100,000 to 150,000 acres. The witness excludes from his estimates some 650,000 acres held under lease which he calls 'wild-cat' territory. He testifies that about June 1, 1921, he started making his appraisal of these gas reserves—not in money value, but in quantity of gas. His discussion of the several factors used in determining the reserves is technical and we believe highly speculative. It is too lengthy to set out here in detail. He concludes that the reserve supply in the present wells on September 30, 1921, the date he testified, was 123 billion cubic feet; that on December 30, 1920, that reserve was 144 billion cubic feet and that between those dates the company had used up or produced about 22 billion cubic feet, or at the rate of about 30 billions per year. He estimated that there was a reserve in the 'unoperated' but 'proven' territory of about 228 billion cubic feet, which would require 780 new wells to produce. He makes a well location for about every 160 acres, but, as already stated, excludes from his estimates about 650,000 acres of 'wild-cat' territory held under lease by the company. These two estimated reserves at the time he testified aggregate about 351 billion cubic feet. He assumes the life of the present wells to be ten years and calculates from his estimate of 123 billions to be produced from them that it will require a sale price of 31.95 cents per thousand cubic feet to pay the operating costs and to retire the present going investment. Again, figuring the estimated cost of the 780 new wells necessary to produce the

> 228 billion cubic feet of reserves in the 'unoperated' but 'proven' territory, estimating that these and the present wells will require 20 years to exhaust both reserves, he estimates that it will require a sale price of 26.62 cents per thousand to pay the costs of the new wells, operating costs, and to retire the present and necessary future investment. He takes no account of profits and makes no estimate of present values. Of course, the appellants contend that little value can be attached to this character of testimony; and while his method of estimating gas reserves may be the best method known, his estimates are mere estimates and nothing more. We can not see how the Commission, upon such estimates, could fairly ascertain the value of the gas in the ground, at the mouth of the well, or at the city gates, as suggested in the opinion of the Commission. We consider such estimates too uncertain to form a basis for a valuation of the company's leaseholds; and in this respect we agree with the Commission. Therefore, under any view of the present record, the company has not shown by competent evidence that it is entitled to any appreciated values upon its leasehold property."

While Mr. Davis has gone into his subject much more exhaustively than he did in Case No. 1251, yet his theories and methods are not substantially or materially different. As quoted above "his estimates are mere estimates and nothing more." The fullness and elaboration with which such estimates are presented now does not change their character. Of this we are convinced. Nothing has been added by Mr. Davis which makes his recent estimates any more reliable, dependable or certain than those which have met with the disapproval of this Commission and the Supreme Court of Appeals.

In addition to the foregoing evidence the company offered the testimony of Mr. T. O. Sullivan, Mr. John B. Corrin, Mr. T. B. Gregory, Mr. John Davidson and Mr. A. G. Wamock. The value given by these witnesses upon the gas reserve or gas acreage ranges from $30,000,000

fixed by Mr. Gregory to $45,000,000 fixed by Mr. Wamock. Other witnesses were introduced who testified as to the sale price of gas per thousand cubic feet in the field, as well as upon the question of value, but the testimony of these witnesses is not insisted upon as a basis of value by the Gas Company, and we are of opinion that such testimony can not be accepted as a measure of the value of the leaseholds in this case. In many instances the prices for gas are covered by contracts with public utility companies whose rates are regulated by the Commission, and in other instances the price given is dependent upon the amount allowed by local industrial plants, such plants being governed wholly by local conditions. It is the same sort of evidence which was rejected by the Pennsylvania Commission and the Supreme Court of Pennsylvania in the City of Erie case, and by the Supreme Court of New York in the Pennsylvania Gas Company case.

City of Erie, et al. v. P. S. C. (Pa.), 123 Atl., 471;

People *Ex. Rel.* Pennsylvania Gas Co. v. P. S. C. (Supreme Court of New York, 3rd Dept., decided Jan. term, 1925).

A study of the testimony of Mr. Sullivan, Mr. Corrin, Mr. Gregory, Mr. Davidson and Mr. Wamock shows that these gentlemen in fixing their respective "market value" upon the "gas reserve" or "gas acreage" used as the basis or foundation of such "market value" the "gas reserve" or "gas content" or "recoverable gas" as estimated by Mr. Davis or by themselves; Mr. Davidson, however, being the only witness who gave a gas content of his own, and the price which they thought might be received for gas in Pittsburgh or elsewhere in Pennsylvania, Ohio, New York and Indiana. Mr. Sullivan in arriving at a value of $34,000,000 says that he had in mind a "market in Ohio and Pensylvania" for the gas. (Record 278.) Mr. Corrin in arriving at the sum of $35,000,000 testifies that his value is based partly on Mr. Davis' estimate of gas con-

tent (Record 275) and his opinion that the gas recovered from the territory of the Gas Company could be sold in Pittsburgh and other markets for a sum sufficient to give the gas acreage said value. (Record 270-275.) Mr. Gregory in arriving at a valuation "in excess of $30,000,000" bases the same upon what he believes the gas might be sold for per thousand cubic feet in Ohio, Pennsylvania, Indiana, New York and West Virginia. (Record 306.) Mr. Davidson in placing a valuation of $39,000,000 upon this "gas reserve" explains that he arrived at this figure by taking into consideration "the operated acreage and the acreage considered as tested acreage and reduced it to cubic feet of gas," and by placing a value on the "untested acreage" of $10.00 an acre; and further, that in ascertaining the value of the tested acreage he "figured out the probable quantity of gas there • • • considering it worth 4½ cents per thousand cubic feet," and that he arrived at this price per thousand cubic feet because he "figured the United Fuel Gas Company could sell it for that if it could deliver it, but he knows of no reserve gas in the ground selling at 4½ cents and never heard of any selling at such price;" and in further explanation of his figure of 4½ cents he adds: "I believe the United Fuel Gas Company could get that price for it over and above the cost to them. In other words, a cash basis for it to the Hope, the Carnegie or any of those companies." (Record 315-355.) Mr. Wamock testifies as to the "worth" of 300,000 acres, giving the sum of $45,000,000, explaining his basis for such figure to be "what we receive for gas" and "the demand for gas in the different fields." There is no explanation of just what he means or further development of his testimony. (Record 368-374.) Certain of these witnesses contemplate an industrial market in Pittsburgh and elsewhere only, others include an industrial and domestic market.

A careful analysis of this testimony fails to reveal a leasehold valuation or the value of "the leases" as such, all going to "gas reserve" or "gas content" or "gas acre-

age". It follows that this testimony is dependent upon two factors, or, shall we say happenings of contingencies? First, the presence of the gas in the ground as estimated by Mr. Davis and, so far as Mr. Davidson is concerned, as estimated by him. Second, the price which may be received for such gas per thousand cubic feet in Pittsburgh, Ohio, Pennsylvania and other states and points covered in the testimony. None of the witnesses upon whom the company relies to establish the value of its "gas reserve" shows anything more than a suppositious market for the gas which they estimate will be produced and extracted in the years to come from the territory of the company. We are asked to assume that this gas may be marketed in Pittsburgh for industrial purposes and in somewhat equally distant places for industrial and domestic purposes. There are no near markets in which it is shown that this gas could be used and marketed in the quantities in which it is produced, as there were in the City of Erie case, *supra*. Value being based upon what the gas may sell for in Pittsburgh or elsewhere, it follows that the testimony of these witnesses contemplate not only the production of all of said gas content from said territory, but its delivery at Pittsburgh or at such other points. Meredith, President, speaking for the Court, in Natural Gas Company of West Virginia v. Public Service Commission, *supra*, at page 568 says:

> "It is almost inconceivable that there could be an open market for these gas leaseholds, situated as they are, which would not be based upon the rate at which the utilities are selling gas to the public."

It is equally inconceivable here that there could be an open market for this "gas reserve" or "gas content" situated as it is which would not be based upon the rate at which utilities are selling gas to the public. Unless we are to assume, for the purpose of placing a valuation upon this gas reserve, that this Gas Company owns and operates a gas line to Pittsburgh and elsewhere through which

it may deliver this gas to such points, and it does not have any such line, then we must find from the record that, in order to get this gas to Pittsburgh and other points, it must be delivered to other public utility companies and transported to Pittsburgh and such other points by such other companies. Such of the gas of this company as may now reach Pittsburgh is carried there by the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company, being delivered to these companies by this Gas Company at Cedarville, and both of said companies being public service corporations and subject to the regulatory powers of this Commission. Such other gas of this company as reaches other markets is transported by companies subject to the jurisdiction of like commissions in Ohio, Pennsylvania, Indiana and New York. And, under the usual practice of companies of the character of this Gas Company, gas is sold to such other public utility companies for use outside of the State and within the State under private contract and at what is usually called "a wholesale rate." Suffice it to say that this Commission has power to fix rates for natural gas sold within the State, whether such gas be sold for domestic, industrial or wholesale purposes.

> Clarksburg Light & Heat Co. v. Public Service Commission, 84 W. Va. 638; P. U. R. 1920A, 639;
>
> Van Lear P. Shriver, et al. v. Manufacturers Light & Heat Co., (Pennsylvania Public Service Commission); P. U. R. 1921E, 411;
>
> Peoples Natural Gas Co. v. Public Service Commission of Pennsylvania, et al., 279 Pa. 252.

Public utilities control, produce and sell all but a negligible quantity of gas, and this gas can not be transported to any market relied upon in this record except by the permission of the State and under the regulation of the State. Now and then an independent producer, as is shown in the evidence, is able to contract on favor-

able terms with some industry nearby, which, as it is assured of a more continuous, exclusive and useable supply by reason of taking all the gas of such producer, may pay a higher rate than that allowed a public utility, but no such nearby market is shown here, and no condition independent of the rate of return or earnings of the Gas Company appears.

> "Evidence of the appreciated value of its leaseholds to be competent must not be based upon but must be independent of the rate of return or earnings."
>
> Natural Gas Co. of West Virginia v. Public Service Commission, *supra*.

In the last mentioned case the witness for the company, Mr. Wyer, had fixed certain prices per acre "on the basis of considering such leaseholds for sale in the open market." Passing upon Mr. Wyer's testimony, the Court said (page 567):

> "He does not define or point out any 'open market' for them nor state whether the purchaser in this 'open market' was one engaged in selling gas to the public or one buying it from a public utility company."

The purchaser here may be the Hope Natural Gas Company, the Pittsburgh & West Virginia Gas Company, the Manufacturers Light & Heat Company and other public service corporations named by Mr. Davidson and Mr. Gregory in their testimony, being companies engaged in selling gas to the public, or may be industrial concerns in Pittsburgh and elsewhere who use gas or rates approved by the Public Service Commissions of Pennsylvania and said other states, and who must secure their gas from this Gas Company through companies subject to the jurisdiction of this Commission. As indicated already, these witnesses placed their estimated value upon what they believe the gas would bring if it could be marketed at Pittsburgh and other points. It is decidedly unfair to ask this Com-

mission to accept the remote markets offered and to fix a valuation upon this gas property, not as it is but as it might be. This contention of the Gas Company is an effort on its part to do indirectly what it can not do directly. It can not sustain a valuation based upon the price per thousand cubic feet for natural gas; so that it offers witnesses who place a value upon the "gas reserve" or "gas acreage" as a whole. But these witnesses arrive at their value by basing their estimate on the price which they think could be obtained for this gas in Pittsburgh and other places. Suffice it to say that the two cases upon which the Gas Company relies especially condemn this method. The Supreme Court of New York, (Third Department) citing with approval the opinion of the Pensylvania Supreme Court in City of Erie, et al. v. Public Service Commission, *supra*, says:

> "The proofs show that these gas lands have a market value as lands as a whole per acre and are not subject to the criticism that they were opinions as to value based upon the sale price per cubic foot of gas."
>
> People *Ex. Rel.* Pennsylvania Gas Co. v. Public Service Commission of New York, et al. (Decided Jan. term, 1925, not yet reported).

To the same effect, the Pennsylvania Supreme Court in said City of Erie case had declared:

> "The value of the land is not the selling price of a cubic foot of gas as applied to the supposed quantity in a given field; its value is fixed as a whole or at so much an acre."

As these witnesses have testified exclusively as to "gas reserve", "gas content", and "gas acreage", the question suggests itself: Is this "gas reserve" or "gas content" or "gas acreage", owned by the Gas Company? For certainly we can not value a property which is not owned by the utility seeking a valuation thereon. As heretofore stated the Gas Company holds in fee and under lease

814,910.68 acres of oil and natural gas territory, 41,969.47 acres being owned in fee and the remainder being held under written contract or lease. What is this written contract or lease? Such contracts or leases are not introduced in evidence; and we are not given the benefit of any testimony explaining or describing the character of such paper or holdings. The only evidence bearing upon the subject is the statement found in "Davis Exhibit No. 1", wherein Mr. Davis says, "This report covers an investigation of the fee and leasehold property owned and controlled by the United Fuel Gas Company, as of December 31, 1924, * * * the leasehold property is controlled by virtue of the terms of the usual lease contract" (pp. 1-2) and Mr. Jay, an employee of the Company, says that on said last mentioned date the Gas Company "had leases or deeds in fee for the property represented in Mr. Davis' report." (Record, page 416.) Mr. Davis says, "the usual lease contract." But what does he mean by the "usual lease contract"? In a general way we have notice and knowledge of oil and gas leases, their usual terms and obligations; but we also have notice and knowledge that in many instances the lease or contract used by one gas company is different in some respects than that lease or contract used by another company. We are not given the benefit even of the form of lease or contract in use by this gas company. Not only is there no such paper in the record but there is no testimony whatever informing us whether or not all of the acreage is held under similar leases, what difference there may be, if any, in some of the leases, and what are the usual as well as the unusual stipulations in such leases in regard to terms, rental or royalties, free gas, etc. Also, we have taken notice of the fact that some leases may have been obtained by the Gas Company by way of assignment from independent producers or persons engaged independently in the taking up of leases, and that such leases frequently contain provisions that the leases taken by the Company do not con-

tain; that sometimes instead of a royalty being paid for a gas well, an interest in the gas is allowed to the lessor.

In view of the testimony upon the subject of value arrived at through the "gas reserve" or "gas in the ground" and the sum which might be received per thousand cubic feet for such gas at Pittsburgh or elsewhere, it becomes pertinent to inquire, is it this "gas reserve" or "gas content" or "gas in the ground" that is owned by the Gas Company, or is it the lease or the leasehold estate thereby created? The record shows that the Company holds certain acreage in fee and the balance under lease, which acreage it designates its "gas territory". Going outside the record and drawing upon our information, we understand an oil and gas lease to be a paper whereby the owner of the land and the oil and gas thereunder, leases and lets unto the Gas Company or some individual such land for the purpose of operating thereon for oil and gas; such lease being for a term of years "and as long thereafter as oil and gas is produced," the same being made upon a fixed cash consideration sometimes called a bonus, and in the further consideration of the payment, at certain stated periods of rental for the leased premises while the same remains unoperated, and for the payment of a certain stated royalty should either oil or gas be found. We understand that there are usually many conditions embraced in such leases as well as certain obligations assumed by the lessee; such as the right of free gas or a certain royalty in the gas to the lessor, the drilling of a certain number of wells by the lessee, etc. Here we are concerned with the gas. In the fixing of the value the witnesses make no separation of the gas acreage owned in fee and that held under lease and as the fee acreage is small we will deal with the lease or leasehold acreage only. Unless title to the gas has passed to the Gas Company under "the usual lease," it has no title to such gas and this Commission can not place a value upon the gas or gas acreage as such. The record shows that the Gas Company had "leases or deeds in fee" for its gas pro-

ducing territory as of December 31, 1923, which leases were "alive at that time." (Record, page 416.) Such leases or paper pass no title in the gas to the lessee. The title to the gas remains in the lessor and continues as his property until it is extracted, when title vests in the lessee. The only right given to the Gas Company under its lease is the right to explore for oil and gas and to produce them when found. Always has this been the law in West Virginia, a clear expression of which is:

> "The ordinary oil and gas lease giving the lessee for a term of years the right to mine and operate for oil and gas is not a sale of the oil and gas in place and the lessee has no vested interest therein until it is discovered; but when found the right to produce becomes a vested right and when extracted the title vests in the lessee, and the consideration for royalty paid for the privilege of search and production is returned for the leased premises."
>
> Headley v. Hoopengarner, 60 W. Va., 626.

These leases are property, chattels real.

> Barnes W. Va. Code, Chap. 29, Sec. 61.
> Harvey Coal & Coke Co. v. Dillon, Tax Commissioner, 59 W. Va. 605.

It is well to note that it is the leaseholds which are returned by this gas company and all like companies to the "Board of Public Works" for assessment by that body, and that the gas is assessed to the land owner. A strong and interesting discussion of this question, leases and leaseholds, by the learned and distinguished Judge Henry Brannon, then president of our Supreme Court of Appeals, will be found in the opinion written by him in Harvey Coal and Coke Company v. Dillon, Tax Commissioner, *supra*.

These leases being property, and in this case the property owned by the Gas Company rather than the "gas content" or "gas in the ground", they have a value as such. It is a matter within our knowledge and of which we may

take notice that leases and leaseholds are subject to sale and are offered for sale in the market and, therefore, have a market value as such; but in order to place a value upon these leases or leaseholds there is much information, other than the gas content and a market for such gas content, with which the witness must be familiar and which must be brought to the attention of the Commission. Many questions suggest themselves: What acreage is contained within each of the leaseholds; what is the term; what drilling has been had thereunder; what are the carrying charges, the rental and royalty; what part of the property embraced within a lease may be within what Mr. Davis calls "proven territory" and what part thereof may be "probable territory"; and, if the lease be of sufficient acreage, what parts may be within possible or unfavorable territory? If a lease contain an unusually large acreage, what is the stipulation, if any, requiring a certain number of wells to be drilled, and, in the absence of such drilling, how much of said acreage would be forfeited? What is the "free gas provision?" If a money royalty is not paid, is one-fourth or some other amount of the gas produced allowed as royalty?

What are the conditions and requirements with reference to surrender, abandonment, or forfeiture? Full knowledge of these matters would be demanded by any purchaser. It is from these matters that a purchaser may determine an existence or non-existence of value. And as it is upon these very same matters that the value of the leases may depend, the Commission should be fully informed. Such leases being subject to abandonment and forfeiture, the gas content under such of them as may be surrendered, abandoned, or forfeited, would be lost, and under the circumstances, the gas would never become the property of the gas company and used by its consumers. Evidence of the character offered here, based upon the "gas reserve" or "gas content" of a certain part of the acreage of this gas company without any regard whatever to the leaseholds affected and requiring this

Commission to assume that there will be no violation of the conditions of the leasehold and that therefore the total amount of gas content will be produced for the benefit of the gas consumers can not be received by us upon the value of leaseholds. As stated by Commissioner Lewis in the opinion written by him in Case No. 1251 (Bulletin No. 82):

> "If gas is discovered it becomes the property of the company providing the company complies with the terms of the lease in respect to the payment of rentals and royalties."

Mr. Lewis is right in the expression of the contingency upon which the gas after discovery becomes and remains the property of the Gas Company, and, as just suggested, whether or not the gas becomes and remains the property of the Company depends not only upon the gas company's compliance with the terms of the lease in respect to the matters mentioned by Mr. Lewis, but also in other respects, some of which have just been mentioned, but as to the nature of all which we are not advised except in a general way, for the reason that the leases are not before us and were not before any of the witnesses who testified in this case; none of the witnesses showing any familiarity with any of the leases and none of them testifying in relation thereto.

But it may be suggested, can not "the market value" of the leaseholds be arrived at by the Commission from the evidence covering the "gas reserve" and the "Gas acreage"? For reasons already stated, we can not find from the evidence any market value for these leaseholds. It is the lease or leasehold; that thing which the company owns, to which it has title, upon which we must fix a value, and not that thing in the ground, the gas, which is the property of the land owner. That is, fix a "money value", not a value "in quantity of gas", as was significantly stated by Meredith, president, in said opinion in City of Charleston v. Public Service Commission, *supra*.

page 107. As was said in Dillon v. Bare & Carter, 60 W. Va. 483-495, "The inquiry must be, what will the leasehold sell for, not what will the leasehold and the property used with it, or on which it is held, sell for."

Reliance is had by the Gas Company upon two recent decisions involving the valuation of gas territory. I refer to the City of Erie v. Public Service Commission, et al., and People, *ex rel.* Pennsylvania Gas Company v. Public Service Commission, *supra*. Apparently, in a consideration of this case the distinction in facts has not been observed. In both cases the gas company was the owner of the gas in fee and no leaseholds or incorporeal rights were involved. The Company's title to its gas producing properties were under deeds absolute to the gas in the ground. The ownership of the gas was vested in the company upon the passing of the deed. There were no rentals or royalties to be paid and no conditions or obligations to be performed, and the gas is taxed separately to the company on the same ownership deeds. Recognizing a different situation in other States, Mr. W. Pitt Gifford, in a brief filed by himself and others in behalf of the Pennsylvania Gas Company, upon the appeal of said City of Erie case to the Supreme Court of Pennsylvania, at page 36, says:

> "Whatever the law may be elsewhere the respondent's ownership of the gas in land under the law of Pennsylvania is *land* just as much as a farm or a lot with a brick block on it is land and must be valued accordingly. We are not here concerned with the law of other jurisdictions."

Hamilton v. Foster, 272 Pa. St., 95-102;
Rockwell v. Warren Co., 228 Pa. St., 430;
Citizens Gas Co. v. Whitney, 232 Pa. St., 592;
Prager's Estate, 74 Pa. Supreme Court, 592.

In the Erie case, cited, the ownership of the gas under the land is in the company; here such ownership is in the owner of the land. There the gas in the ground is taxed according to its value to the gas company; here it is taxed to the land owner. There, there are no conditions and ob-

ligations to be kept and performed by the company upon which its right to take the gas depends; here, there are many conditions to be performed, including the furnishing of "free gas", the payment of royalty or rental, the proper development of the land, and in addition the lease is subject to forfeiture, abandonment, or surrender.

We reiterate that we recognize the rule laid down in Wilcox v. Consolidated Gas Co., 212 U. S. 19, Bluefield Water Works, etc., v. P. S. C. W. Va., 262 U. S. 679, and other cases hereinbefore cited, to the effect that if the property which enters into the consideration of rates has increased in value since it was acquired, the gas company is entitled to the benefit of such increase; this same rule being restated, approved, and applied to leaseholds in the City of Charleston v. Public Service Commission, *supra*, wherein the Court says, in point 2 of the syllabus:

> "Consequently it is entitled to have included in its present fair value as a rate base for rate making purposes appreciation in the value of its gas leaseholds over investment cost."

But our position is that it is the leaseholds upon which a value must be placed and that such value can not be ascertained through a showing of gas content and a market price for such gas content as attempted here and without knowledge of the terms and conditions of said leaseholds; and further, that it is the market value of the leaseholds as such with which we are concerned. It is recorded in Natural Gas Co. of West Virginia v. Public Service Commission, *supra*, in point 2 of the syllabus:

> "Where in a rate making case a natural gas utility company seeks to establish a rate based upon the reproduction cost new less depreciation value of its property and as a component part thereof seeks to have included therein appreciation of the value of its leaseholds over investment cost, the burden of showing such appreciation is upon the utility."

This burden the Gas Company has not discharged. It

is apparent that if the Gas Company is entitled to the appreciated value of its leaseholds, and we recognize that if an appreciated value can be shown it must be allowed, that value must be upon the property which the Gas Company owns, to which it has title and upon which it pays taxes. That is, the leaseholds, and not upon the gas reserve, gas content, or gas acreage determined from an estimate of gas reserve, title to which may or may not vest in the Gas Company during the life of the field. These leaseholds have a value. The same may be determined, perhaps, upon a reproduction basis or upon a market value basis as they are bought and sold in the market; and there must be a method of establishing such market value, if any, and such reproduction value. It is the right "to mine and operate" for gas and the *right* to produce the same when found which is owned by the Gas Company; it is that right, represented here by said leaseholds, upon which we must place a value.

No appreciation in value of leaseholds having been shown, the only other evidence in the case from which we may determine the fair value of such leaseholds is the book cost. When this Gas Company was reorganized in 1909 it acquired certain properties from the United States Natural Gas Company and the Hope Natural Gas Company. "Jirgal Exhibit No. 3, page 4", shows that these "acquisitions were recorded on the books at values which apparently had no reference to any cash consideration involved." The acreage taken over by the Gas Company from the old company was entered upon the books with the acreage secured from the United States Natural Gas Company and the Hope Natural Gas Company in the same account. From "Jirgal Exhibit No. 4" we find "this acreage was first given a value of $5.00 per acre at about the time of acquisition." The total acreage there referred to was 1,056,443.58 acres and at $5.00 per acre would amount to $5,282,217.90. In "Jirgal No. 3", page 4, Mr. Jirgal says, "an appraisal was apparently made of the physical property acquired aside from the acreage and the

balance of the book value placed on the total property was considered as applying to such acreage." It was found then that the amount of $5,282,217.90 must be increased by the amount of $1,941,321.06 in order to make up the total value of the property as shown by the books. According to "Jirgal Exhibit No. 3", page 5, this revaluation of leaseholds was made as follows:

> "In 1911 the officers of the company placed a value on each leasehold or other property rights ranging from $1.00 to $50.00 per acre, the aggregate of which values exactly absorbed the valuation placed upon the properties acquired; thereby making out of such leasehold account "a wash account".

And further Mr. Jirgal says in the same exhibit:

> "In all 1,056,443.38 acres were valued in this manner and the total valuation assigned was $7,233,538.96 * * * for the purpose of this valuation, all of the acreage which had already been charged off to expense on account of abandonments, amounting to about 500,000 acres, was replaced on the books and charged off again at the assigned valuation of approximately $1.00 per acre."

From this it follows that the original acreage of this company was valued at said sum of $7,233,538.96 regardless of the actual cost thereof or investment therein. Since the fixing of said book value at said last mentioned amount and up to December 31, 1923, the Gas Company through "gas property purchased" and "leases acquired" has obtained 1,100,887.09 acres of gas territory. During this same period it has sold and lost through surrender and abandonment 1,342,419.99, an amount slightly in excess of the acreage acquired, leaving within its control in December 31, 1923, the said 814,910.68 acres, to which reference has been made. The acreage acquired within said period cost $1,252,515.30, the purchased being acquired at the average of $7.14 per acre and the leases at 74 cents per acre. The acreage sold and abandoned was charged

off the books at $1,855,087.67, an average price of $1.38 per acre. In this book account the gas company has included royalties since 1911 of $340,543.41, the same representing renewal payments for leases for second and third renewals. It has also included in this account "oil department acreage" amounting to $238,589.59, which, when deducted, leaves on the gas department books as the book cost of its leaseholds, the sum of $6,732,920.28. From this must be deducted other oil department acreage amounting to $389,590.61, giving a book cost as of December 31, 1923, of $6,343,329.67. (Jirgal Exhibit No. 1 and No. 6.) In order to bring this book cost down to the nearest possible date, we must add to this sum the acreage obtained within the period from December 31, 1923, to November 30, 1924. That is $18,131.75, (Hightower No. 4-a) making a total book cost of $6,361,511.42. In this connection it should be added that since the said reorganization in 1909, to December 31, 1923, the carrying charges of this gas territory, that is, the leasehold expense, rentals and royalties, have been $8,817,909.96; (Jirgal Exhibit No. 3, page 11,) and Jirgal Exhibit No. 6 and No. 9). It is these rental and royalty payments, the rentals amounting to $6,458,091.66 and the royalties to $1,691,455.63, which have kept alive the leases of the Gas Company, thereby perpetuating the gas company's right to drill for gas and preserving its right to produce and extract gas. While it would seem from Mr. Jirgal's testimony and exhibits filed therewith that the "appraised" book cost of the leaseholds is questionable and that such book cost is approximately $1,813,763.40, and that there has been an appreciation placed on the value of such leaseholds through the said appraisal made in 1911, yet we feel that, upon the whole record, we must recognize such appreciation in value, as made upon said appraisal, and the book cost of the leaseholds and natural gas rights of the Gas Company as shown upon the books, which is $6,361,511.42; and this book cost being the only evidence of the value of such leaseholds, we must conclude that

the present fair value of such leaseholds is the said sum of $6,361,511.42.

(c) WORKING CAPITAL.

THE PARTIES to this proceeding have agreed upon $990,000 as an allowance for working capital. The Commission believes such sum to be necessary and sufficient and, accordingly, this amount is allowed.

(d) GOING VALUE.

That there is this element of value, that is a going value, attaching to a plant like that of the United Fuel Gas Company, which must be considered in arriving at the fair value of the property of such company, there can be no doubt. Such value is recognized by the protestants; the only difference in opinion being the amount which should be fixed for such value, but, as stated by Mr. Uebelacker, such value "cannot be arithmetically computed"; and for this reason Mr. Uebelacker did not include any sum for going value in his valuation of physical property. (U. Ex. No. 1, pp. 12-13). He adds, however, that "the fact that no amount has been included for going concern value in particular, does not imply that such value is non-existent"; and we agree, as indicated above, that this plant does have a going value. Mr. Hagenah recognizes that such value attaches, using to sustain him, the decisions of a number of commissions and a few courts. He takes an arbitrary figure of ten per cent, approximately, of his estimate of the reproduction cost new, less depreciation, as representing the going value, being the sum of $3,080,000.00. Mr. Uebelacker has given us two estimates, one of from three to three and one-half million dollars, and another of $8,500,000, approximately. (Record pp. 94-100-151.) Of this we are satisfied, that the first opinion of Mr. Uebelacker is more nearly correct than the last; that the sum of $8,500,000 is too large. Giving consideration to the factors and elements of going concern value enumerated by Mr. Uebelacker in his testimony (Record

pp. 94-100), and likewise taking into consideration the gas territory owned by the company, and particularly its favorable location and the character of acreage as detailed in the testimony of Mr. Corrin and Mr. Sullivan and others, the protection afforded the gas producing acreage by other acreage, the favorable contracts held by the Company, the territory as defined by wells which have been drilled, including dry hole, the testimony of Mr. Hagenah upon the subject and the estimates of value made by Mr. Uebelacker and Mr. Hagenah, we are of opinion that the plant of this Gas Company has a going value of $3,000,000.00.

PRESENT FAIR VALUE.

Totalizing the values at which we have arrived, as set forth in the preceding paragraph, we get the sum of $35,999,969.14, which we determine and fix as the present fair value of all the property of the Gas Company; the rate base in this proceeding.

Upon this amount the Gas Company is entitled to earn operating expenses and taxes, an amount sufficient to take care of deterioration or depreciation, a sufficient sum to amortize or retire over the remaining period of its life the unamortized or unretired portion of its property, and a fair return.

II.

AMORTIZATION, DEPRECIATION AND DEPLETION.

These terms as used by the Gas Company in this proceeding are defined by Mr. Uebelacker as follows:

> "The term 'amortization' applies to an allowance for the eventual retirement of the present value of gas reserves and the present value of operating plant in West Virginia upon the exhaustion of the supply of natural gas which is essential for its operation.

"The term 'depreciation', as used herein, and, in the amount which has been assigned to it, means simply an allowance for the equalizing of the annual expenditures for keeping the plant in condition to perform 100% service; and, accruals to a depreciation fund calculated in this way are in no sense intended for the retirement of the value of the investment. They are simply an equalization of the annual expenditures for maintenance and replacements, and any fund accruing under the allowance which we have made, would accrue perhaps for two or three years and then, as any heavy expenditures for maintenance were made by the Company, become entirely exhausted, and then might accrue for two or three years, and, on the recurrence of a period of heavy expenditures for maintenance, again be entirely exhausted. It is in no sense for the purpose of returning the value of the property used in the service at the termination of such use.

"The term 'depletion' as used here, we will say, applies to the retirement of the cost of well drilling equipment, less salvage, and plus the cost of recovery of such portion of the well equipment as can be recovered, the cost of plugging wells, and other incidental expenses of abandonment."

(a) AMORTIZATION.

With the exception of the manner of the application of "the amortization rule" we agree with the definition of that term as given by Mr. Uebelacker. Where he uses the language "the present value of gas reserves" in this case, we would use "the present value of leaseholds;" such present value, by reason of that being the only proper evidence in this case, being the book cost as hereinbefore fixed, so that it follows that the "amortization rate" as used herein is an allowance for the eventual retirement of the present value of leaseholds and natural gas rights and the present value of the operating plant or physical property of the Gas Company upon the exhaustion of the supply of natural gas which is essential to the operation of the physical plant. Thus we do not separate for amor-

tization purposes what Mr. Uebelacker calls "the gas reserve" and what we call "Leaseholds" from the physical property. This separation was suggested in Case No. 1251 but held unnecessary in Charleston v. Public Service Commission, *supra*, and the records of the Company have been so kept that no separation could be made at this time, for the reason that we can not determine from such records the amount of earnings or profits or receipts from gas sales which have been devoted to the retirement of the value of the gas reserve or leaseholds as distinguished from the retirement of the value of the physical plant. Naturally the question arises, over what period shall this retirement or amortization be spread? Shall it be spread over the life of this property beginning with the year 1909, or shall it be spread over the remaining years of the life of the property, or shall we only take into account in arriving at a proper rate the years in which a rate base was fixed by this Commission? It is my opinion that the entire life of the property should be taken and not the remaining life or said last mentioned period of years. This position is sustained in Clarksburg Light & Heat Co. v. Public Service Commission, *supra*. Ritz, Judge, among other things, declaring:

> "It will not do to say that this Company could by continued active operation for the first half of its life exhaust more than one-half of its gas supply and declare the whole of it in idvidends as profits on its investment and then begin the amortization of the investment after its property had been thus depleted."

And in Fuhurmann v. Iroquois Natural Gas Co., P. U. R. 1919D, page 76, the New York Public Service Commission says:

> "The amortization charge against the consumers of natural gas company should not be confined to the period following a valuation in a rate proceeding, but should be spread over the entire life of the property, both past and future."

The financial history of this Company discloses that from the period of its reorganization in 1909 to 1923, its earnings have been $46,087,749.11, after deducting operating expenses and taxes; that within the same period the adjusted net earnings have been $53,340,656.21, the adjustment in net earnings resulting from an adjustment of the sales of gas by this Gas Company to its parent companies at a rate equal to the average rate at which such gas is sold to its other wholesale consumers. These adjustments, however, do not begin until the year 1918. Allowing during this same period 1½ per cent on the book investment to take care of deterioration or depreciation in the property, amounting to $1,233,590.75, more than the amount actually used for such deterioration and depreciation, and allowing a fair return of 8 per cent on the said book investment for the years in which no rate base had been fixed by this Commission, and allowing said 8 per cent upon said rate base in the years in which the same was fixed, there was left for retirement or amortization purposes on December 31, 1923, without the adjusted sales, $15,415,420.36 and, with such adjusted sales, $22,668,327.84. Thus, under the principle announced in said Clarksburg Light & Heat Co. v. Public Service Commission case, *supra*, and said Fuhrmann v. Iroquois Natural Gas Company, *supra*, this company has amortized to said last mentioned date $22,668,327.84 of its plant. But it is the judgment of the Commission that instead of spreading this amortization and the adjusted sales over the life of the property, the retirement or amortization should be restricted to the period from 1916 to the present time. During these years the Commission treated amortization and depreciation together. The rate allowed by the Commission for amortization and depreciation purposes for these years, and the rate base upon which the same was applied, are set out in the cases of this Gas Company before the Commission hereinbefore cited. These allowances for depreciation and amortization are

1916-1918, inclusive, 6 per cent;
1919-1922, inclusive, 8.6 per cent, and
1923 8 per cent, the rate of return throughout said period being 8 per cent. During this period the adjusted net earnings were $45,125,363.87; but applying the said amortization and depreciation percentages during said period there was earned for depreciation and amortization purposes $16,788,210.12. After deducting this last mentioned amount from said adjusted net earnings, there was left to the Company $28,337,153.75, thereby giving to the Company a rate of return considerably in excess of 8 per cent.

As will be shown under the subject of "Depreciation", at the rate of 1-½% upon said book investment, this Gas Company earned during these years, for the purpose of taking care of deterioration and depreciation in its plant, the sum of $2,759,473.09, more than enough to take care of the actual and used deterioration and depreciation. Deducting this sum from said amortization and depreciation earnings and thereby separating the same, we have $14,028,737.03; the same being the amount of property amortized during said period.

At this point the questions which present themselves are:

FIRST: Shall this said amortization amount be deducted from the book cost of the property, or shall it be taken from the fair value of such property?

SECOND: Within what period of years may the unamortized book cost or fair value of the property be amortized?

Answering the first question, it is the judgment of the Commission that it is the fair value of the property which is to be amortized; for which purpose we must fix a rate. It is with reluctance that the writer takes this view; but as long as the present fair value of a property is held to be the proper rate base, and the amount upon which a utility is entitled to a fair return, rather than the amount

prudently invested, we must amortize that present fair value rather than such book investment. It is the present fair value, as held in the decisions of the United States Supreme Court and our own Supreme Court of Appeals in cases hereinbefore cited, upon which the utility is entitled to earn a fair return; this value being regarded as actual money devoted to the use of the public by the utility. Therefore, it is that actual money, represented here by property, which has appreciated in value, which the Gas Company is entitled to have returned to it through amortization. We must be consistent; if we allow the fair value for one purpose we must allow it for the other. As we view it this is the holding of the courts; we can not be governed by our individual views.

Clarksburg Light & Heat Co. v. Public Service Commission, *supra*;

Michigan Public Utilities Commission v. Michigan State Telephone Co., 200 N. W. 749.

But before arriving at that present fair value for amortization purposes, from which to deduct the amount already earned for amortization, we must take from the present fair value of the property as found by us the $200,000 allowed as working capital. This for the reason that this working capital is money put into the treasury or cash account of the Gas Company for the purpose of taking care of current operating expenses, which sum or any part thereof may be withdrawn in the discretion and judgment of the managing officers of the Company. Subtracting this last mentioned amount from said rate base, leaves $35,069,969.14. From this we take the amount of property amortized as of December 31, 1923; that is, the said sum of $14,928,737.03, leaving to be amortized during the remainder of the life of the property the sum of $20,981,232.11.

In answer to the second question, we find that the life of the property from said December 31, 1923, is not less than eighteen years. This is the opinion of Mr. Wallace,

Vice President and General Manager of the Company. (Record, Case No. 1251, 723; Record, Case No. 1516, pp. 808-809.) Mr. Davis and Mr. Uebelacker express the same opinion. (Record Case No. 1251, pp. 126-129; Record, Case No. 1516, p. 480; "Uebelacker Exhibit "A", pp. 17-21.)

Another matter which should be determined is the salvage value of the Gas Company's property at the end of said period of eighteen years, or at the end of its use; but upon the present record such value can not be determined. The time is too far distant for the Commission to say whether this same property may be used for artificial gas purposes or for any particular purpose. It may have a junk value only. Of this we are certain, that is, that under the amount of money heretofore used for depreciation and operating expenses, and the allowance here made for such purpose, this property can be maintained in its present excellent condition. Of course this is to the advantage of the Gas Company, but upon a later hearing had for the purpose of making such adjustments as may be necessary in the amortization and the depreciation rate, this Commission will make a special investigation of the value which may attach to the plant or any part thereof at the end of its service, and take such value into consideration in arriving at a proper amortization rate.

This record shows that the Gas Company has reached the peak of its development and operation. This being true, for the purpose of maintaining production to the present extent at least, the Commission will include in its allowance for amortization an amount sufficient to amortize the future additions to the property; the present allowance being based upon the probable additions for the next five years.

Agreeable to the foregoing, the Commission finds 4.15 per cent as an amount sufficient and necessary for the amortization of the unamortized portion of the present fair value of the property. As we have seen, during the period from 1916 to December 31, 1923, this Company

earned more than the fair return and amortization and depreciation allowances made by the Commission in the cases cited. For this excess, the writer deferring to the majority of the Commission, the Gas Company has not been required to account, and no part of the excess, has been applied to the amortization of the property. In the future and until all of the property has been amortized, but to that time only, any earnings of this Gas Company in excess of the allowances herein specifically made shall be applied to the amortization of its property.

III.

DEPRECIATION AND DEPLETION.

Mr. Uebelacker's definitions of depreciation and depletion have been quoted. It is apparent that the term "depreciation" is not given the same meaning by him in this case as that given to it generally; the reason therefor being that the gas company here is a limited life utility and not a perpetual utility and that the cost of the property consumed in the service is given back through amortization, so that depreciation is, as stated by Mr. Uebelacker, "simply an allowance for the equalizing of the annual expenditures for keeping the plant in condition to perform 100 per cent service;" being what may be termed an extraordinary maintenance charge. It has no relation to the rate base but only to book cost of the property for the purpose of maintaining which it is allowed, so that the rate at which we arrive is a rate fixed upon the depreciable property only, but for the purpose of convenience applied to the rate base. This is in accord with the former holdings of this Commission as well as recent cases.

> "Depreciation reserve should be applied to the investment rather than the present value figure."
>
> Georgia Railway & Power Co., et al., v. Railroad Commission of Georgia, et al. (U. S. Dist. Court); P. U. R. 1925A, 546.
>
> *Re:* Kansas City Gas Co. (Mo. P. S. C.); P. U. R. 1925A, 653.

Under this rule, which is agreeable to the method of the Gas Company's engineer, Mr. Uebelacker, except as to the value of the property upon which the rate is to be applied, should an expenditure for depreciation purposes be necessary and the cost of the unit used for replacement be more than the book cost, such excess cost is added to the rate base or present value of the property, so that there is a charge upon the books equaling the original cost of the unit which is being replaced and the excess cost goes to capital and upon this excess cost the company earns the eight per cent here allowed and is permitted to amortize the same, together with the rest of its property. We find the book cost of the depreciable and undepreciable property to be $26,288,911.83, as of December 31, 1923. This property is now in approximately 83.5 per cent condition. In fact, for all operating purposes, Mr. Uebelacker says it is in "100 per cent condition". The property being in such excellent condition indicates that it has been maintained in a high state of efficiency since the beginning of operations in 1909, a period of fourteen and one-half years. We encourage such maintenance by allowing operating expenses as asked by the company. Having used the observed depreciation method in arriving at the present condition of the property, we see no reason for departing from such method and accepting the theoretical, speculative and arbitrary assumptions and calculations concerning the future needs of this company for depreciation purposes. (Pacific Gas & Electric Co. v. City of San Francisco (U. S.) P. U. R. 1924D, 817.)

The record shows (Jirgal Exhibit No. 6, p. 3, col. 6) that this company has actually used through the years stated for the purpose of depreciation, $2,950,222.32. Apparently it has met with no serious emergencies during this long life and in view of the expenditures for additions to plant made in the past year, and through recent years, of approximately $2,000,000 per year, and the liberal use of operating expenses, we are justified in assuming that no serious emergencies will be met in the future.

Certainly the record sustains no foundation for any large sum to meet emergencies and it is with the record we are concerned. But, although in the past no large reserve has been needed to take care of emergencies and unforeseen contingencies, yet, realizing that both the Gas Company and the rate payer should be protected and knowing that it is possible that an emergency may arise, we are of opinion that a small depreciation reserve should be maintained. As the Company has not separated its fund for depreciation purposes and amortization purposes, we can not determine from its records how much of the depreciation reserve upon its books represents amortization and how much depreciation. Therefore, to arrive at a proper depreciation reserve we have taken one and one-half per cent of the book cost and applied this per cent to each of the years 1916-1923, inclusive. If the company had done this it would have accrued over this period down to December 31, 1923, $2,759,473.09. Subtracting the used depreciation over this same period, that is, $2,035,156.82, from said reserve so realized, that is, $2,759,473.09, gives $724,316.27 as a depreciation reserve on hand January 1, 1924, to meet emergencies or contingencies, or, using the thought of Mr. Uebelacker, "for the purpose of equalizing the annual expenditures, for maintenance and replacements."

In the past fourteen and one-half years the Company used an average of $203,463.61 per year. The percentage which we allow, being 1.12 per cent upon the rate base, will realize approximately $404,333 per year. Such of this amount as is not actually used in any year will be added, of course, to the reserve, and should any year require an expenditure of more than said amount, such excess must come from said reserve. In this we foresee the equalization of which Mr. Uebelacker speaks.

We emphasize the difference between a utility of this character and a perpetual utility. In the perpetual utilities high depreciation reserves are frequently urged and sometimes a small reserve justified, as there is no amorti-

zation of the property. This property being amortized, the Gas Company and the investors get the property back through amortization and not through depreciation. Not only would it be unnecessary but it would be an unjust and unfair burden to the rate payers to create here both a depreciation reserve and an amortization reserve, and, as we have indicated, Mr. Uebelacker does not advocate such former reserve, stating, "It is in no sense for the purpose of returning to the owners of the propery the value of the property used in the service at the termination of such use." It being in no sense a return to the Gas Company of the value of its property, there is no reason for fixing the percentage of depreciation upon the fair value.

We fix a rate on the book cost of one and one-half per cent. Applying this to the rate base gives 1.12 per cent. While this is ample to take care of any situation which it is reasonable to suppose may arise, as judged from past experience, yet it may be added, that the doors of the Commission are always open and that adjustments in amortization and depreciation allowances can be made at any time the same may be necessary. The effect of this holding is to maintain this property in its present excellent condition throughout the period of its life.

The term depletion, as defined by Mr. Uebelacker, has never been applied by the Gas Company nor by this Commission. Heretofore, both the Company and the Commission have included the term depletion, as used by Mr. Uebelacker, within depreciation. This we must continue to do and the allowance which we have made for depreciation covers both depletion, as used by Mr. Uebelacker, and depreciation. There is no reason for making a separation. (City of Charleston v. Public Service Commission, *supra*.)

IV.

RETURN.

While the Commission has uniformly allowed a return

of eight per cent upon either the investment or fair value of the property employed in the public service by a utility engaged in the natural gas business because of the hazard and risk which it has been agreed attaches to such business, yet while the risk and hazard was certainly present in the days of non-regulation, it is not present, at least to a very great extent at this time. With this Gas Company, all the territory acquired for gas production is carried through operating expenses paid by the consumers of gas. If a dry hole is drilled upon any of the acreage, it is likewise taken care of in operating expenses. Through amortization, the Gas Company has paid back to it not only the money which it puts into the plant but the present value of the plant. Further than this, acreage which proves of no value is likewise taken care of either through amortization or depreciation, so that while the independent or private operator does have the hazard and risk incident to an acquirement of bad acreage or the drilling of dry holes and the payment of royalties and rentals, there is no such risk here. The Commission can see no great risk in the business of this Gas Company that is not associated with other utilities. However, considering the value of the service as an element of value which should receive consideration, we will allow the usual return of eight per cent upon the rate base.

V.

GASOLINE.

The privilege of extracting gasoline from natural gas produced by this company is owned by the Virginian Gasoline and Oil Company, such privilege and the gasoline property and rights of the Gas Company having been sold to said company on May 1, 1922. As the record in Case No. 1251 discloses, and this record discloses, this Virginian Gasoline and Oil Company is a subsidiary of the Gas Company and owned by the holding or parent companies or the owners of the United Fuel Gas Com-

pany. The relationship of this Gas Company and its subsidiary is set out at length in the opinion written by Meredith, President, in the City of Charleston v. Public Service Commission, *supra*, as well as in the Bulletin written by Commissioner Lewis in Case No. 1251. The relationship and connection there established continues to exist. Conditions under which the Gasoline is extracted and the agreement of May 1, 1922, between the said Gas Company and Gasoline Company have not changed. As requested by the Gas Company, through its counsel, we have re-examined this gasoline question "with a view of determining and fixing a more stable basis for handling this phase of the case than is furnished by allowing one-half of the net profits derived from the sale of gasoline." Our examination leads us to the conclusion that under the facts in this present record, considered together with the facts in the record of Case No. 1251, we must reach the same conclusion as that at which the Supreme Court of Appeals arrived. The record supports and compels a finding agreeable to said holding, so that, using the language of the Court, "we think the extraction privilege is worth at least fifty per cent of the net profits and that proportion should be charged to the gas business."

VI.

VALUE OF THE SERVICE.

Reliance was placed upon the value of the service in Case No. 1251, and considering that record with the record in the present case upon this subject, we find no reason for attributing any special value to this service other than that which may be allowed through taking the value of the service into consideration in arriving at a proper rate of return. In this we are supported in the City of Charleston v. Public Service Commission, *supra*, in which case no allowance was made for such value although the question was raised before the Commission and before the Court upon appeal.

VII.

REVENUE AND EXPENSES.

The amount of net revenue that the Gas Company is entitled to earn depends upon the fair value of its property, a fair return thereon, the amount necessary for depreciation and depletion, and the amount necessary for amortization. As hereinbefore stated, we have arrived at a fair value of the Gas Company's property, the sum being $35,999,969.14. We have fixed a return of either per cent, a rate of 1.12 per cent for depreciation and depletion, and a rate of 4.15 per cent for amortization, a total of 13.27 per cent upon said rate base.

From what has just been said, the Gas Company must earn annually approximately $4,779,534.53 over and above its operating expenses and taxes. The gross revenues for the year 1923 were $7,730,176.40; (Jirgal Exhibit No. 6, Page 7, Line 1) the operating expenses and taxes were $3,734,802.82. (Jirgal Exhibit No. 6, Page 7, Line 11.) Subtracting the operating expenses and taxes from the gross revenue leaves $3,995,373.58 as the net earnings for said year. But, agreeable to the former holdings of this Commission and the decision of the Supreme Court of Appeals in said City of Charleston v. Public Service Commission, *supra*, certain adjustments must be made in these net earnings. We refer to the amount which should be paid to this Gas Company by its subsidiary, the Virginian Gasoline and Oil Company, for the "extraction privilege", which we hold to be worth "at least 50 per cent of the net profits" and to the receipts from gas sold by the Gas Company to its parent companies, the Columbia Gas and Electric Company and the Ohio Fuel Supply Company. Making these adjustments, there should be added for the gasoline "extraction privilege" for the year 1923, $934,393.41, ("Jirgal Ex. No. 1", p. 12) and on account of the sale of gas to said parent companies, $2,143,661.46 ("Exhibit Nease Report", p. 12, year 1923). Also there must be added to said net earnings on account

of production expense chargeable to the oil department, $88,039.31; profit and loss adjustments, $92,287.19; property taxes apportionable to other departments, $7,207.43; or a total adjustment of operating expenses of $187,533.93; (Jirgal Exhibit No. 6, Page 2) making a total of all adjustments amounting to $3,265,588.80. Adding said adjusted net earnings to the net earnings shown by the company, we have as the proper net earnings $7,260,962.38 for the year 1923, a return of 20.55 per cent upon the rate base found in this case.

For the year 1924 we do not have as complete a record as should have been made for us. However, in fixing the rate base we included therein the additions to capital for the greater part of said year, that is for the period ending November, 1924, and therefore we must take into consideration the revenues for the same period. By comparing "Hightower Exhibit No. 3-A" and "Hightower Exhibit Z", with the said 1923 earnings and operating expenses, we estimate the gross earnings for 1924 will be $7,770,000, approximately, the operating expenses and taxes, $3,890,000, leaving a net operating income of $3,880,000. To this amount must be added, agreeable to the foregoing, gasoline receipts estimated at $520,000, and gas sales to the said parent companies amounting to $2,400,000. Thus we arrive at an estimated net income for the Gas Company for the year 1924 of $6,800,000, a return of 18.89 per cent upon the rate base herein fixed.

VIII.

From the above it follows, necessarily, that the earnings, and receipts of the Gas Company are sufficient to give it the allowances herein made and a fair return upon the present fair value of its property; that the rates asked, as set out in the said tariff or schedule "P. S. C. W. Va. No. 4" are unjust and unreasonable and that said tariff or schedule must be cancelled.

An order will be entered agreeable hereto.

DIVINE, COMMISSIONER:

I am of the opinion that the rates filed by the Gas Company should be cancelled. This conclusion is reached in view of the evidence, which shows the Gas Company is making sufficient to give it a net return of approximately 12 per cent on the fair value of its property—as I determine it—using Jirgal's figures as to income and expense and the decision of the Supreme Court of Appeals in the case of City of Charleston vs. Public Service Commission, 95 W. Va. 91, P. U. R. 1924-D, 346. In that case it was seriously contended that in determining a just and reasonable rate, the value of the service to the consumer should be given consideration. Though the Court did not pass on this matter directly—in fact, did not even mention it—it is evident from the opinion that the Court held that a just and reasonable rate should be determined solely on the basis of the return on the fair value of the property, and no consideration given to the value of the service.

There is good authority for holding that the value of the service should be considered in determining a just and reasonable rate, but until our Court recognizes this as a proper matter for consideration in determining rates, I do not think we should give consideration to it. However, I desire to call attention to a few authorities bearing on this question:

Covington & Lexington Turnpike Co. vs. Sandford, 164 U. S. 578, 41 L. Ed. 560.

Cotteng vs. Kansas City Stockyards Co., 183 U. S. 79.

Canada Southern R. Co. vs. International Bridge Co., L. R. 8, App. C. 723, 731-2.

In view of the necessity of this Commission determining a just and reasonable rate solely on the basis of the Company receiving a return upon the fair value of its property, in my opinion the proposed rates should be can-

celled. If weight is given to the value of the service, the present rates should be increased, but not to the extent claimed by the Gas Company.

In the case of Re-Application of United Fuel Gas Company Case No. 585 and in other cases, this Commission held the Gas Company should account for one-half of the net profits received from gasoline; that the value of the privilege of using the gas for the extraction of gasoline was worth that. In the case of City of Charleston vs. Public Service Commission, *supra*, the Supreme Court of Appeals held the extraction privilege is worth at least 50 per cent of the net profits received for the gasoline.

If the retail consumers paid for gas on the basis of the value of the privilege of using it, or on the same basis as the Gas Company is required to account for gas used for gasoline purposes, the present rates to retail consumers would be materially increased.

In my view the fair value of the property of the United Fuel Gas Company as of December 31, 1924, is $41,165,000, which amount is reached by valuing the different classes of property as follows:

Physical Property, Dec. 31, 1923	$26,000,000.
Leaseholds, Dec. 31, 1923	10,500,000.
Going Concern Value	3,000,000.
Working Capital	999,000.
Additions to property in 1924	666,000.
	$41,165,000.

In arriving at the value of the physical property, I took into consideration the reproduction cost as found by Mr. Uebelacker and by Mr. Hagenah. These two engineers are within a few dollars of being together on the reproduction cost new except as to the items of interest during construction and cost of financing. If the amount of these items is allowed as contended for by Mr. Uebelacker (as they should be), and added to the Hagenah

reproduction cost new, the appraisals of the two engineers are within a few dollars of being together.

However, the two engineers differ very materially on depreciation, but an investigation of this question shows that Mr. Hagenah's theory of depreciation is untenable and the best evidence as to the proper amount to depreciate the property is that given by Mr. Uebelacker. To my mind, Mr. Uebelacker's reproduction cost less depreciation should be accepted rather than that given by Mr. Hagenah.

I also considered the estimated historical cost of the physical property, as testified to by Mr. Uebelacker, which I find to be $24,852,199.

I considered the book value as given by Mr. Jirgal and found the value of the physical property as of December 31, 1923, to be $19,317,202.

I gave consideration to the book cost adjusted to reflect prices as of December 31, 1923. I did this by adding 65 per cent to $9,251,206, which was that part of the investment in the physical plant installed prior to 1917.

After giving consideration to all the evidence on the value of gas rights and other evidence bearing on the matter, I have reached the conclusion that the fair value of the leaseholds is $10,500,000. I gave consideration to all the evidence introduced in connection with the value of gas rights given by the Gas Company, and it seems to me the two principal objections to the Company's contentions in this respect are:

I. The value placed upon the gas holdings is based on a rate of return, or earnings from the sale of the gas estimated to be in the ground, all of which evidence is contrary to the decision of our Supreme Court of Appeals in the case of Natural Gas Company of West Virginia vs. Public Service Commission, 95 W. Va. 57, and the case of the City of Charleston vs. Public Service Commission, 95 W. Va. 91.

II. All the witnesses who testified in behalf of the

Gas Company as to the value of the gas holdings, evidently assumed that the Company had fee ownership of the gas, whereas, as a matter of fact, it has mere leaseholds; the leasehold expense, the annual rental on the leaseholds, and royalties, when operated, being borne by the consumer.

The evidence clearly shows that the Company has invested in its gas holdings $6,971,509. The evidnece also clearly shows that from June 30, 1909, to December 31, 1923, the consumers paid in connection with these leaseholds as leasehold expense and rental on unoperated acreage the sum of $7,126,454.; and from January 1, 1916, to December 31, 1923, the consumers paid $1,252,896. as royalties, making a total of $8,379,350. paid by the consumers, being $1,407,841. more than the Gas Company had invested in the properties. It also appears the annual charges paid by the consumers in connection with the leaseholds are approximately $700,000.

I believe in fixing the value of the gas leaseholds we must value them as such and also give consideration to the fact that the consumers paid more to maintain these leaseholds than the Company has invested in them, and will, in the future, be required to pay all these operating expenses in connection therewith, which would not be the case if the Company owned the gas rights in fee.

I cannot agree with Chairman Stathers that the amount to be amortized is the fair value of the property. This Commission has uniformly held that only the amount to be amortized is that which has been actually invested. The allowance of anything for amortization was on the asumption that the life of a natural gas company is limited, and as soon as the gas is exhausted, the company is left with a large investment in the property which has not been returned to it. This scheme for the allowance of an amount for amortization only contemplated the owners of the property should have returned to them, in addition to a return upon their investment, every dollar they had put into it. If we accept, in this case, the fair

value of the property or the rate base as the amount to be amortized, the consumers are not paying back the actual investment, but are paying a much larger amount; they are also paying the owner the appreciated value of the property,—an amount which does not represent the expenditure of a single dollar.

If we hold that the rate base is the amount to be amortized, then the consumer is not only paying a return upon a value far in excess of the amount actually invested, but he is required to pay to the owners of the company for amortization many millions of dollars in excess of what has been actually paid out by them.

I cannot agree with the following statement made by Chairman Stathers in regard to amortization:

> "In the future and until all of the property has been amortized, but to that time only, any earnings of this Gas Company in excess of the allowance herein specifically made shall be applied to the amortization of its property."

The amount which we allow to amortize the property is just like any other operating expense allowance. We should compute what is necessary and what should be allowed each year to amortize the property within its estimated life. In my opinion it is not fair to the Company to hold that they may not make over eight per cent upon a rate which we have fixed as just and reasonable.

I cannot agree with Chairman Stathers as to the amount the Gas Company is to account for by reason of its sale of gas to the two parent companies. It is true that at the present time it has wholesale customers from whom it is receiving an average of 19.45c per thousand cubic feet, but I do not think that is any reason why this rate should be applied to the two parent companies. We are not adjusting contract rates between various wholesale purchasers, but are trying to determine the fair amount of revenue the company should receive in order to fix the rate for its retail consumers in this State. If we held that these two parent companies should pay 19.45c

per thousand cubic feet for gas, we are requiring them to pay a rate nearly as high as the domestic consumers and higher than some of the retail consumers. In my opinion we should accept Mr. Jirgal's figures on this matter.

In my judgment it is not necessary to indicate what rate of return this Company is entitled to receive. We are making an effort to determine just and reasonable rates, and though we may give this matter consideration in our study of the case, I do not think it necessary—particularly in this case—to fix the rate of return this Company is entitled to.

In my view the following is a statement of the Earnings and Expenses, which should be accepted in this case:

EARNINGS

Gross Earnings, Jirgal Ex. 1, Page 6	$ 9,225,673.00
Add 50% Gasoline Net Earnings	934,393.00
Total	$10,160,066.00

EXPENSES

Operating Expenses and Ordinary Taxes	$ 3,343,450.00
Income Tax	312,346.00
Amortization and Depreciation 3-1/4% on rate base of $41,165,000	1,337,862.00
	$ 4,993,658.00

Earnings	$10,160,066.00
Expenses	4,993,658.00
Net Earnings	5,227,408.00

The views which I have expressed in this memorandum do not in any way affect the results of this case. In the absence of giving weight to the value of the service, in determining a just and reasonable rate, the rates filed by the Company should be cancelled.

LEWIS, Commissioner, dissenting:

I cannot concur in the foregoing opinion of Chairman Stathers in at least three different particulars:

(1) In fixing the value of the gas reserves or the gas leases of the United Fuel Gas Company, he has disregarded what seems to me to be binding and sufficient evidence of a proper value of said leases. Value is a matter of opinion of persons experienced in dealing with the property in question and the market therefor. In making investments in gas properties, the investor either relies upon his own judgment as to the quantity of gas contained under the leases sought or takes the advice of geologists and other persons experineced in such matters. In the instant case, many witnesses who have spent years in the development of gas properties, who have been buying and selling gas leases, and who are acquainted with the market value of such properties, have testified as to the present fair value of the gas reserves or the leases and leasehold estates under consideration. A geologist and engineer of reputation and experience in the investigation and examination of gas reserves testified as to the quantity of gas contained in the land covered by said leases and also as to the value of said gas. There was no effort made to contradict any of these witnesses as to the value each one placed on the gas property in question. The evidence of these witnesses is uncontradicted except by what the books show to be the original cost of said leases. The book cost of a gas lease does not reflect the value of the lease itself or of the gas contained thereunder. A gas lease would not be worth anything if there was no gas under the land covered by said lease. The territory covered by a large portion of the leases in question has been proven to contain large deposits of gas and for that reason a substantial value has been added to said leases. If we are to ignore the testimony of the witnesses mentioned and to say that they have not proven any value that attaches to said leases over and above the book cost thereof, we must then say that if said leases have a value over and above the book cost thereof, that value cannot be proved, which is begging the question.

(2) I cannot agree with Chairman Stathers in the matter of the retirement or amortization of the property in question. In order to ascertain how much property remains to be amortized it is necessary to find out how much of the property the stockholders have taken out in excess of what they were entitled to earn as a fair return. The instant case differs from the case of the Clarksburg Light & Heat Company vs. Public Service Commission, cited by Chairman Stathers, in that in the latter case the stockholders had taken out very large amounts of money over and above a fair return and had not reinvested it in the property. In the instant case the stockholders have reinvested in the property in the way of increasing the gas holdings, maintaining the service, and improving the service, a sum in excess of $18,000,000.00. Mr. Uebelacker says that the wear and deterioration of the physical plant of the gas company, not including the gas areas, amount to more than $8,000,000.00. That is, the consumers have had the benefit of $8,000,000.00 worth of the plant which amount the stockholders have lost by reason of serving these consumers and which amount will not be returned to them unless it is taken out of the amortization fund. The stockholders are entitled to have this plant returned to them in a one hundred per cent condition in respect to its present fair value. Mr. Stathers ignores this sum of over $8,000,000.00 and proceeds to deduct an amount in excess of $14,000,000.00 from the present fair value of the property before he undertakes to provide for the amortization of the plant in the future. The stockholders put their earnings back into the plant and are entitled to have these earnings returned to them in the way of amortization. It is unfair to them to ignore the sum of over $8,000,000.00 that has been lost to them by reason of the use of the property and further deduct a sum in excess of $14,000,000.00 and then provide for the amortization of only the residue of the plant and the additions that will be made in the future.

(3) In arriving at the amount of revenue the gas com-

pany earned for 1924, Chairman Stathers includes a sum of $2,400,000.00, which he holds the two parent companies should have paid for the gas they used in excess of the amount they actually paid. In arriving at this additional revenue, it is necessary to charge the parent companies a fraction in excess of 15c per thousand cubic feet for the gas delivered to them. It is in evidence in this case and uncontradicted, that it costs a fraction in excess of 11c per thousand cubic feet to deliver gas from the gates of the city to the domestic consumers (Uebelacker Exhibits Nos. 5 to 8A, inclusive). It costs the gas company no more to deliver the gas to the parent companies than it does to deliver it to the gates of the city. Under the present rates, the domestic consumers of Charleston are getting their gas for 20c per thousand cubic feet and the Huntington consumers for 21c per thousand cubic feet. It has been the experience of the Commission in such investigations that it costs at least 10c a thousand to distribute gas from the gates of the city to the consumers. Mr. Uebelacker in his estimate did not give any weight to leakage in the distribution system. If it costs 11c to distribute gas from the gates of the city to the domestic consumers of this gas company, and the parent companies are required to pay in excess of 15c for gas delivered at wholesale, it follows that the parent companies and other wholesale consumers are bearing an expense that should be borne by these domestic consumers. The gas company is selling gas at wholesale to some of its patrons at a greater price than it is getting for gas from the domestic consumers, and in considering the revenues of the gas company this revenue which is derived from wholesale gas is included. I cannot agree with the statement of Chairman Stathers that this Commission has jurisdiction over the wholesale gas. If it has such jurisdiction, then in order to avoid discrimination it should reduce the prices to some of the wholesale consumers.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA

CAPITOL BUILDING, CHARLESTON.

A meeting of THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, held on the 24th day of March, A. D., 1925.

CASE No. 1516.

UNITED FUEL GAS COMPANY,

Investigation and suspension of P. S. C. W. Va. No. 4, prescribing rates for natural gas to its consumers within the State of West Virginia.

This proceeding came on this day for final decision upon the tariff or "Schedule of Rates for Natural Gas" filed by the United Fuel Gas Company with this Commission on the 26th day of April, 1924, "effective May 31st, 1924," known and designated as "P. S. C. W. Va. No. 4" and superseding "all preceding schedules"; the order of the Commission entered herein on said 26th day of April, 1924, suspending the operation of said tariff or schedule, pending a hearing, investigation and decision thereon, until the 22nd day of August, 1924, unless otherwise ordered by the Commission; the notice given by the Gas Company as required by said order; the Company's protest, in writing, against, or motion to vacate, the said order of this Commission; the motion, in writing, filed by the protestants, to strike out the said "protest or motion"; the appearance to this proceeding and protest against said tariff or schedule of rates entered by the City of Charleston, the industrial consumers of the City of Charleston and vicinity, the City of Huntington, the Manufacturers Club of the City of Huntington and others; the motion of the Gas Company to consolidate this proceeding and "*In Re* United Fuel Gas Company, Application for authority to change rates for natural gas, Case No. 1251; the joinder in said motion by the protestants and the con-

solidation and hearing together of the two proceedings; the orders of this Commission entered herein on July 2nd, 1924, August 21st, 1924, and February 18th, 1925, the last order further suspending the operation of said tariff or schedule to the 25th day of March, 1925; the evidence taken before the Commission at its offices at Charleston, beginning with the initial hearing on May 28th, 1924, and ending with the final hearing on January 25th, 1925, and the argument of counsel for the Gas Company and the protestants.

Upon consideration of all which, the Commission is of opinion that, for reasons set out in a written opinion, which is hereby made a part hereof, the said protest against, and motion to vacate and set aside, said suspension order of April 26th, 1924, should be overruled; that the rates for natural gas set out in said tariff or schedule, "P. S. C. W. Va. No. 4" are unjust and unreasonable, and that said tariff or schedule should be cancelled.

It is, therefore, considered and ordered by the Commission that said motion to vacate said suspension order of April 26th, 1924, be, and the same is, hereby overruled, and that said tariff or schedule be, and the same is, hereby, cancelled and held for naught.

LEWIS, Commissioner, dissents.

DIVINE, Commissioner, concurs in the order but dissents from certain views expressed in the opinion, as shown in memorandum filed herewith.

A Copy.

Teste:

R. B. BERNHEIM,
Secretary.

[fol. 145] IN UNITED STATES DISTRICT COURT

[Title omitted]

ANSWER OF DEFENDANTS THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, HOWARD B. LEE, ATTORNEY GENERAL OF THE STATE OF WEST VIRGINIA, AND FRED M. LIVEZEY, COUNSEL FOR THE SAID THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA

[fol. 146] Now come The Public Service Commission of West Virginia, Howard B. Lee, Attorney General of the State of West Virginia, and Fred M. Livezey, Counsel for the said The Public Service Commission of West Virginia, and for answer to the bill of complaint of the plaintiff herein and without waiving their notice to dismiss said bill of complaint, but at all times relying thereon, answering show:

First

These defendants admit the averments contained in the first clause of the plaintiff's bill.

Second

That it is true that this suit is of a civil nature in equity and is brought for the purpose of enjoining the enforcement of an order of the Public Service Commission of West Virginia, entered on the 24th day of March, 1925, refusing to allow the plaintiff to increase its rates for furnishing natural gas to its customers in the State of West Virginia, but these defendants deny that the cause of action asserted by the plaintiff arises under the Constitution and laws of the United States because of any of the reasons alleged by the plaintiff in its said bill of complaint, and these defendants specifically deny that the rates which the plaintiff is required to charge because of the order aforesaid are confiscatory of plaintiff's property. These defendants deny that said order and the proceeding of the said [fol. 147] Public Service Commission deprive the plaintiff of its property without due process of law, or deny to the plaintiff the equal protection of the laws in violation of plaintiff's right under the Fourteenth Amendment to the

Constitution of the United States, and these defendants, therefore, deny that said order is null and void as alleged in the plaintiff's bill of complaint.

These defendants say that it may be true that the amount in controversy in this suit exceeds the sum or value of three thousand ($3,000.00) dollars, exclusive of interest and costs.

Third

These defendants admit the averments contained in the third clause of plaintiff's bill of complaint, except insofar as it is therein alleged that the plaintiff discovered that it was impossible to operate under the rates prescribed by The Public Service Commission of West Virginia, so as to yield to the plaintiff a fair return upon its property used and useful in the public service and to pay the expenses of conducting said business, and these defendants deny that it was impossible for the plaintiff to operate under the rates so prescribed by said Public Service Commission of West Virginia so as to yield to the plaintiff a fair return upon its property used and useful in the public service and pay the expenses of conducting said business as is alleged in said bill of complaint.

[fol. 148] Fourth

These defendants admit the averments of the fourth clause of the plaintiff's bill of complaint, but these defendants do not admit the correctness of the fair value of the various items of the plaintiff's property as testified to by the witnesses on behalf of the plaintiff and as alleged in said fourth clause of the plaintiff's bill of complaint, but these defendants say that the aggregate of the fair value of the plaintiff's property does not exceed the sum of $35,999,969.14, as fixed in the opinion of Chairman Stathers, exhibited with the plaintiff's bill of complaint, marked "Exhibit P. S. C. Opinion."

Fifth

These defendants admit that part of the plaintiff's property consists of gas rights in more than eight hundred thousand acres of land, but these defendants aver that the total acreage of such gas rights as disclosed by the record

in the proceeding before the said Public Service Commission of West Virginia is 814,910.68 acres, of which 41,969.47 acres is owned in fee and the remainder of which is held under written contracts, referred to in the testimony as leases.

These defendants admit that the plaintiff had a survey and study of such gas rights made by Ralph E. Davis and that the said Ralph E. Davis made a report showing the result of his survey and study and his conclusions with respect thereto, as alleged in plaintiff's bill of complaint, but [fol. 149] these defendants deny that the conclusions so reached by the said Ralph E. Davis, as shown by his said report and by his testimony before said Commission, constitute competent or proper evidence, but on the contrary, these defendants say that the correct fair value of such gas rights, as shown by competent and proper proof before said Commission, is not in excess of the sum of $6,361,511.42.

These defendants further admit that with the information furnished by Mr. Davis, the firm of Ford, Bacon & Davis undertook to ascertain the value of such gas rights, and in doing so the said firm attempted to set up such value based upon figures which had no relation to public service control; that the method used and the results obtained fully appear from the valuation report of said firm of Ford, Bacon & Davis, as alleged in said bill of complaint, and that as shown by said report said firm found that said gas rights had a value of $36,449,176.00, but these defendants deny that such valuation is the present fair value of such gas rights.

These defendants further admit that the plaintiff introduced before said Commission a number of other witnesses who testified with respect to the value of such gas rights, but these defendants deny that the testimony of such witnesses constitute competent and proper evidence of such values, for the reasons set forth in the opinion of Chairman Stathers.

Sixth

These defendants admit the averments contained in the sixth clause of the plaintiff's bill of complaint.

The plaintiff, in its bill of complaint, refers to the said opinion of Commissioner Stathers as setting forth the holdings of said Commission, and said opinion will be so treated

and referred to in the answer of these defendants, but these defendants say that the individual views of the members of said Commission are as set forth in said several opinions exhibited with plaintiff's bill of complaint, reference to which exhibits is here made.

[fol. 150] Seventh

These defendants say that it is true that the Commission found the going concern value of the plaintiff company to be three million dollars and that it also found that $900,000.00 was a proper amount for working capital, including the value of supplies required to be kept on hand, but these defendants deny that the amount so found by the Commission for going concern value and working capital would make a total present fair value of the physical property of $32,621,320, as is alleged by the plaintiff in its bill of complaint, but these defendants say that said sum of $32,621,320, represents the estimate by Ford, Bacon & Davis of the reproduction cost new, less depreciation, of the plaintiff's property exclusive of the value of gas rights and using the going concern value and working capital as determined by the Commission.

These defendants say that it is true that the Commission found that there was included in such estimate of the cost of reproduction new, less depreciation, an item of $254,332.00, the cost of dry holes, and that it is likewise true that the Commission was of the opinion that such item should not be included in ascertaining the present fair value of the plaintiff's property, for the reasons set forth in opinion of Chairman Stathers.

These defendants deny, however, that the Commission found the present fair value of the plaintiff's property, excluding the value of gas rights, to be $32,366,988.00, as alleged in the plaintiff's bill of complaint.

These defendants say that it is true that the Commission found the present fair value of the plaintiff's property, ex- [fol. 151] cluding the value of gas rights, to be the sum of twenty five million dollars as of the 31st day of December, 1923, but these defendants deny that such finding was made because of the fact that such property did not cost the sum of $32,366,988.00, as is alleged in plaintiff's bill of com-

plaint. These defendants say that such valuation of twenty-five million dollars as of the 31st day of December, 1923, was arrived at by the Commission from all of the evidence before it and in accordance with the principles of law applicable thereto.

These defendants say that it is true that in addition to the twenty-five million dollars the Commission allowed the sum of $666,639.45, which had been added to the plaintiff's plant since the 31st day of December, 1923.

These defendants deny that it was shown by the testimony of witness Hightower that there had been expended for additions to the plant the sum of $2,000,676.57, in addition to the value of parts which had been retired, but these defendants say that the testimony of said witness Hightower showed an increase in "capital expenditures" during the year 1924 up to the 30th day of November of that year, of $2,000,676.57, and that of this amount $1,334,037.10 had been expended in incomplete construction, leaving the sum of $666,639.47 expended upon completed construction. These defendants say that it was thus shown that said sum of $666,639.47 had been expended upon completed construction, and assuming that such construction had been put into service, the Commission allowed such sum as a part of the present fair value of the plaintiff's [fol. 152] plant, but that the evidence showed that the amount of $1,334,037.10 had been expended in incomplete construction, and there being no evidence whatever as to when the property represented by such amount may be put into the public service, the Commission refused to include such amount in the fair value of the plaintiff's property, which holding is strictly in accordence with the principles of law applicable thereto.

These defendants deny that the decision and action of the said Public Service Commission in fixing the present fair value of the plaintiff's plants at $25,666,639.47 determines such value to be nine million dollars less than the actual present fair value of such properties. These defendants specifically deny that the judgment and action of said Commission failed to allow the plaintiff the actual present fair value of its property as a basis for the rate to be paid by its consumers, and these defendants specifically deny that the action and findings of said Commission with

respect to the value of the plaintiff's said property is a taking of the plaintiff's property without just compensation and in violation of the Fourteenth Amendment to the Constitution of the United States.

Eighth

These defendants deny that the Commission refused to consider any of the evidence introduced by the plaintiff with respect to the value of its gas rights and gas properties, but that it is true that the Commission allowed as a value [fol. 153] therefor for the purpose of rate making the sum of $6,361,511.42, and these defendants deny that the plaintiff company, or its predecessors, paid said sum for said gas rights many, many years ago, as is alleged in plaintiff's bill of complaint. These defendants say that the said sum of $6,361,511.42 is the amount at which the plaintiff's gas rights, consisting of leases and leaseholds, are carried upon the plaintiff's books, after deducting the amount expended for oil leases, and that it appeared from evidence before the Commission that such amount had no reference to any cash consideration involved, but was the result of an appraisal made in 1911 by the plaintiff company; that the evidence before the Commission tended to show that the actual cost of such gas rights was approximately $1,813,763.40. These defendants say that in the absence of any competent or proper evidence showing an appreciation in the value of the plaintiff's gas leases and leaseholds, and for the reasons set forth in its opinion, the Commission accepted the book value after the adjustment aforesaid, and included the sum of $6,361,511.42 as the present fair value of such gas rights in the total amount representing the present fair value of the plaintiff's property.

These defendants admit that in addition to the sum of $6,361,511.42, the book cost of said leases, the plaintiff has paid out the sum of $8,817,989.96 as rentals or installments upon said leases, whereby the same have been kept in effect, but these defendants say that said sum so paid out as lease rentals was paid out of the earnings of the plaintiff company and charged to operating expenses and that after charging such rentals to operating expenses and making [fol. 154] due allowance for amortization, the plaintiff company has earned more than a fair rate of return upon the

fair value of its property in each year, and that since the plaintiff's patrons or gas consumers have thus paid such rentals, the Commission properly held that the said sum of $8,817,909.96 so paid out by the plaintiff for lease rentals should not be included as a part of the cost of such leases.

These defendants deny that the rate of return allowed by the Commission is inadequate for any of the reasons set forth by the plaintiff in the eighth clause of its bill of complaint.

These defendants deny that the evidence introduced by the plaintiff as to the present value of its gas rights, as alleged in the eighth clause of said bill, is competent and proper evidence and these defendants deny that the present fair value of such gas rights is at least the sum of thirty million dollars.

These defendants specifically deny that the action of the Commission in fixing the value of said gas rights at $6,361,511.42 and in denying the plaintiff the right to charge a rate to its consumers which would produce a return on any larger sum as respects such gas rights, deprives the plaintiff of its property to the extent of twenty five million dollars, or to any extent, without compensation, and these defendants specifically deny that the action of said Commission is in violation of the Fourteenth Amendment to the Constitution of the United States.

Ninth

These defendants specifically deny the averments contained in the ninth clause of the plaintiff's bill of complaint.

[fol. 155]

Tenth

These defendants say that it is true that said Commission fixed the fair value of plaintiff's property upon which it was entitled to a return in the aggregate at $35,999,966.14, and adjudged that plaintiff was entitled to a return of eight per cent. upon this amount, that it was also entitled to a return of one and one-half per cent. for the purpose of depreciation, and that in addition thereto it was entitled to earn sufficient to amortize the plant within the probable life of the property.

These defendants deny that the Commission found, as

alleged in the plaintiff's bill of complaint, that the plaintiff was only entitled to have its plant amortized to the extent of twenty million dollars, instead of the full amount thereof. It is denied that the Commission found that the plaintiff company had set up an amortization, or depreciation, reserve which amounted to nearly fifteen million dollars, but it is averred that the Commission's findings with respect thereto are as set forth in the opinion of Chairman Stathers exhibited with the bill of complaint.

These defendants say that it is shown by said opinion that the financial history of the plaintiff company discloses that during the period from its reorganization in 1909 to 1923 the plaintiff earned over and above its operating expenses, including a reasonable allowance for depreciation, and over and above a fair rate of return upon the fair value of its property the sum of $22,668,327.84, and that applying the principles of law applicable thereto the company had [fol. 156] amortized to December 31, 1923, its plant to the extent of $22,668,327.84. For reasons appearing in said opinion, instead of spreading such amortization over the life of the property, the Commission restricted such amortization to the period from 1916 to the present time. It appears from said opinion that during such period the Commission treated amortization and depreciation together. After segregating depreciation from the amortization, as approved by the Commission in the various cases before it, it appears from said opinion that the plaintiff company earned for amortization purposes, applying the rates as approved by the Commission during said period from 1916 to December 31, 1923, the sum of $14,028,737.03, and that after deducting this sum, together with the sum earned for depreciation, from the net earnings of the plaintiff company during the period, that there was left to the company out of its net earnings a sum which gave to the company a rate of return considerably in excess of eight per cent.

As from said opinion it will appear the Commission found that the plaintiff was entitled to amortize the fair value of its plant rather than the cost hereof, and afer deducting the sum of $[illegible], allowed as working capital, from the rate base, it was found that the fair value of the plaintiff's property which it was entitled to have returned to it through amortization was $35,869,969.14, but of this sum

the plaintiff company had returned to it, as hereinbefore shown at rates approved by the Commission, during the period from 1916 to December 31, 1923, the sum of $14,028,737.03, so that there was left to be amortized during [fol. 157] the remainder of the life of the plaintiff's property the sum of $20,981,232.11. It will thus be seen that the plaintiff company under said opinion, in addition to operating expenses, including depreciation, and a fair rate of return, is permitted to return to itself through amortization a total value of $35,009,969.14, although the total book cost of the plaintiff's property to December 31, 1923, was only $26,288,921.83.

These defendants deny that such holding as is set forth in said opinion entirely loses sight of the fact that the property has already been amortized to the extent that this amortization reserve exists as is alleged in plaintiff's bill, and these defendants now aver that the plaintiff company has not set up on its books any such amortization reserve, but that the amortization earned and to be earned is fixed by said opinion.

These defendants deny that the valuation claimed by the plaintiff for its property is practically nine million dollars less than the property would cost new, although it may be true that some of the witnesses on behalf of the plaintiff may have fixed a reproduction cost new at approximately nine million dollars in excess of their estimate of the cost of reproduction, less depreciation.

These defendants aver that, as held in said opinion, the plaintiff is entitled to have amortized the fair value of its plant, that beginning with the year 1916 and up to December 31, 1923, the plaintiff has had returned to it by [fol. 158] by way of amortization said sum of $14,028,737.03, and that it is entitled to have returned to it during the remainder of the life of its property the balance of $20,981,232.11.

These defendants deny that to deduct said fourteen million dollar amortization fund from the present fair value of the plaintiff's property is to take it off twice, or that to do so presents the anomalous position of giving the plaintiff a rate of return upon the present fair value of its property, but permitting the public to take that property and use it in the public business and consume it therein by paying only twenty million dollars therefor.

These defendants deny that said Commission held that the plaintiff was only entitled to have its plant amortized to the extent of twenty million dollars, but say that the holding of said Commission is as hereinbefore stated and as will more fully appear by reference to the opinion of Chairman Stathers; and these defendants specifically deny that the action of said Commission deprives the plaintiff of its property without compensation, or constitutes an appropriation thereof to the public use without compensation, or that the same is in violation of the Fourteenth Amendment to the Constitution of the United States.

Eleventh

These defendants admit that it is true that in determining whether or not plaintiff was entitled to increase its [fol. 159] rates the said Commission attempted to ascertain the plaintiff's income from all sources, that having ascertained this said Commission found that plaintiff's total income was producing a sufficient return upon the present fair value of the plaintiff's property as found by said Commission. These defendants specifically deny that such method does not reach a just conclusion, for the reason alleged in the plaintiff's bill of complaint, or for any other reason.

These defendants say it may be true that a large part of plaintiff's gas is sold at wholesale under what is termed in the bill of complaint "private contract", at a higher rate than is received for the gas delivered to what is termed in the bill of complaint "public service consumers", but because of the condition incident to such sales, respectively, these defendants deny that the effect of the method adopted by said Commission in ascertaining whether or not a fair rate is being received, is to appropriate to the use of so-called public service consumers in West Virginia profits made by the plaintiff upon the gas sold to its so-called private consumers and to its public service consumers in other states.

These defendants aver that the rates at which the plaintiff sells its gas within the State of West Virginia to the so-called private consumer, and public service consumer, are subject to regulation by the Public Service Commission of West Virginia.

These defendants deny that any return or profit made by the plaintiff upon gas sold to its wholesale consumers [fol. 160] and others is private property and these defendants deny that said commission by its order or opinion has taken any profits derived by the plaintiff from its wholesale consumers and appropriated the same to the use of the so-called public service consumers, and these defendants specifically deny that the action of said Commission as shown by its order and opinion constitutes an appropriation of the plaintiff's property to the public use without just compensation, or that the same is in violation of the Fourteenth Amendment to the Constitution of the United States. These defendants deny that the question to be determined by said Commission and the method of determining such questions are as alleged by the plaintiff in the eleventh clause of its bill of complaint.

These defendants deny that the holding of the Public Service Commission is erroneous, or that the same deprives the plaintiff of its property without just compensation in violation of the Fourteenth Amendment to the Constitution of the United States, as is alleged in the eleventh clause of the plaintiff's bill of complaint.

These defendants say that it may be true that in order to reach the conclusion that the plaintiff's net income for the year 1923 was $7,260,962.38, that the Commission added to the actual income of the plaintiff as shown by its books the sum of $2,143,661.46, being the difference between what the plaintiff charged its parent companies for gas furnished to them, and what the Commission held should have been charged, and by adding the further sum of $934,393.41 for [fol. 161] one half of the net profits from the manufacture of gasoline during the year 1923, and these defendants say that such action of the Commission is strictly in accordance with a decision of the Supreme Court of Appeals of West Virginia as will be more fully set forth hereinafter.

These defendants say that there is nothing significant in the fact that the Commission in making such adjustment of earnings did not reduce the sum by the amount that the plaintiff received from other wholesale consumers and other consumers outside of the State of West Virginia in excess of the average West Virginia public service rate, but these defendants aver that the action of said Commission in

that regard was strictly in accordance with the evidence adduced before said Commission and the principles of law applicable thereto.

These defendants deny that said Commission, in adjusting such net income, did not consider that federal income taxes upon the plaintiff's income would be increased to the extent of twelve and one half per cent of the amount added to the actual income received as shown by the plaintiff's books, and these defendants deny that the Commission made no allowance whatever for such amount, and these defendants further deny that there are other adjustments and allowances made by said Commission which have no support in the evidence.

These defendants specifically deny that the holding of the Public Service Commission of West Virginia with respect to the matters complained of in the eleventh clause of the plaintiff's bill of complaint deprive said plaintiff of its property without compensation, or that the same violates [fol. 162] the Fourteenth Amendment to the Constitution of the United States.

Twelfth

These defendants admit that the Public Service Commission in arriving at its conclusions found that the plaintiff was entitled to receive from the Virginian Gasoline & Oil Company one-half of the net profits arising from the manufacture of gasoline by that company; that it is true that the plaintiff sold to the Virginian Gasoline & Oil Company its gasoline extraction plants, together with all of its oil holdings, for a substantial consideration, and that the plaintiff granted to the Virginian Gasoline & Oil Company the right to extract the gasoline from the natural gas produced by the plaintiff for a royalty of one-eighth of the gross amount received by the said Virginian Gasoline & Oil Company therefor, but these defendants deny that said contract was entirely fair and provides an adequate compensation to the plaintiff for the privileges of extracting such gasoline, but say that the facts with relation thereto are as will be more fully hereinafter set forth.

These defendants say that it is true that the Commission substituted for the consideration provided to be paid in the said contract of one-eighth of the gross receipts from

gasoline, a one-half of the net receipts therefor, which it may be true for the year in question because of a rise in the price of gasoline happened to be much more than the amount provided for in the contract. These defendants [fol. 163] deny that the provisions of such contract provide a much more equitable and suitable compensation for such privilege than that set up by the Commission and these defendants specifically deny that there is absolutely no basis for the findings of the Commission, but on the contrary, these defendants aver that the finding of said Commission with respect to such gasoline earnings is eminently fair and supported by the evidence in the record before said Commission, but that notwithstanding such fact the method of treatment of such gasoline earnings has heretofore been adjudicated by the Supreme Court of Appeals of West Virginia, as will be more fully hereinafter set forth and said Commission was bound by said adjudication.

And these defendants specifically deny that the action of said Commission in increasing plaintiff's revenue by the addition thereto of one-half of the net profits from the manufacture of gasoline has the effect of relieving the public service consumers from the payment of a fair return to the plaintiff for the gas furnished to them to the extent that such one-half of the net profits from said gasoline increases the plaintiff's net earnings, and these defendants specifically deny that the plaintiff is thereby deprived of the right to earn a fair return upon its property, or that the plaintiff is deprived of its property without just compensation in violation of the Fourteenth Amendment to the Constitution of the United States.

Thirteenth

With respect to the method used by the Commission in adjusting the plaintiff's earnings by adding to the earnings [fol. 164] as shown by the company's books, one-half of the net earnings from the gasoline business, and the sum of $2,143,661.46, as the difference between what the plaintiff charged its parent companies for gas furnished to them and what the Commission held should have been charged, these defendants say that these issues have been before said Commission heretofore; that the last case before the present one in which such issues were involved before the

Commission was known as Case No. 1251, in which the Commission on the 9th day of August, 1923, made its decision and order, whereby the plaintiff was granted authority to increase its rates; that pursuant to the statute certain of the protestants who had appeared before the Commission in said Case No. 1251, filed their petition with the Supreme Court of Appeals of West Virginia for an appeal from such order and the order allowing the increased rates was sustained by said Court and the matter set down for hearing and such further proceedings were had in said Court that on the 27th day of November, 1923, said Court reversed and set aside the order of the Commission of August 9, 1923, and remanded said proceeding to the Commission for such further investigation and order as might be proper, all of which will more fully and at large appear by reference to the decision and opinion of said Supreme Court of Appeals of West Virginia, which said case is known as City of Charleston, et al., vs. Public Service Commission, et al., and is reported in Volume 120 S. E. Rep., at page 398, to which reference is hereby made.

These defendants further say that in said Case No. 1251 it was shown before the Commission that the Columbia Gas & Electric Company and the Ohio Fuel Supply Company, [fol. 165] respectively, on fifty one per cent. and forty nine per cent. of the capital stock of the plaintiff company, which said two companies were referred to in said proceedings, and are herein referred to, as the parent companies; that such parent companies were taking from the plaintiff company large supplies of gas, but that they were not paying therefor as high a rate as other producing companies taking gas under similar conditions. It also appeared in said proceeding that the Hope Natural Gas Company and Pittsburg & West Virginia Gas Company were purchasers of large quantities of gas from the plaintiff company, for which they paid a much higher price than did the parent companies, although they did not in practical effect enjoy any special advantages over such parent companies. It was held by the said Supreme Court of Appeals of the State of West Virginia that in ascertaining the revenues of the plaintiff company the two parent companies should be required to pay as high a rate as the Hope Natural Gas Company and the Pittsburgh & West Virginia Company.

These defendants say that the transfer by the plaintiff company to the Virginian Gasoline & Oil Company, as well as the contract between the plaintiff company and said Virginian Gasoline & Oil Company with respect to the right to extract gasoline from natural gas produced by the plaintiff, which said transfer and contract are referred to in the twelfth clause of the plaintiff's bill of complaint, and all of the facts, circumstances and conditions surrounding such transfer and contract were fully set forth in said Case No. 1251, and that the said Supreme Court of Appeals of West Virginia aforesaid held that in ascertaining the correct net [fol. 166] earnings of the plaintiff company at least fifty per cent. of the net profits from such gasoline business should be included in the net earnings of the plaintiff company.

These defendants further answering say that the record in said case No. 1251, after the same had been remanded to said commission by the said Supreme Court of Appeals of West Virginia was, upon motion of the plaintiff, consolidated with the record in the present case No. 1516, in which the order of March 24, 1925, was made by the Commission and of which the plaintiff is complaining in this suit, and these defendants now say that the holding of said Commission in the present case in making adjustments in the plaintiff's revenue with respect to gas sold to the parent companies and earnings from gasoline business, is strictly in accordance with the opinion and decision of the said Supreme Court of Appeals of West Virginia. These defendants, therefore, say that the issues with respect to the proper method of treatment of the plaintiff's revenues in connection with such gasoline earnings and the sales of gas to its parent companies have been fully and finally determined by the said Supreme Court of Appeals of West Virginia by its order and decision made on the 27th day of November, 1923, in the said suit of the City of Charleston, et al., appellants, against The Public Service Commission of West Virginia, et al., appellees, and in which said proceeding the said plaintiff company was one of the appellees and in privity with the defendant, The Public Service Commission of West Virginia, and in which said appeal and proceeding the issues, evidence and exhibits with respect [fol. 167] to the questions aforesaid are identical with the

issues, evidence and exhibits in the subsequent proceeding before said Commission, known as Case No. 1516, and in which said order of March 24, 1925, was made, and of which the plaintiff is now complaining, and by reason of which these defendants now say that such issues have become and are as to the parties hereto res adjudicata.

Fourteenth

These defendants admit the averments contained in the thirteenth clause of plaintiff's bill of complaint.

Fifteenth

These defendants say that it is true that under the provisions of the said act of the Legislature of West Virginia creating said Public Service Commission, it is provided that any public service corporation, or any officer or agent thereof, participating therein, who shall violate any provisions of the act, or any order of the Commission, shall be subject to fines or be imprisoned in jail for each offense, or both, at the discretion of the Court, but these defendants deny that the plaintiff cannot put into effect any rate which would afford to it reasonable compensation for the services rendered by it without being made subject to prosecution therefor and to said fines and penalties, but on the contrary, these defendants say that the rates prescribed by the order of said Commission do and will afford the plaintiff a reasonable compensation for the services rendered by it. [fol. 168] These defendants say that it is true that the defendants, Howard B. Lee, Attorney General of the State of West Virginia, and Fred M. Livezey, counsel for said Public Service Commission, are charged with the duty of enforcing said provisions of said act and the orders of said Public Service Commission and would proceed to enforce against said plaintiff and its officers and agents the fines and penalties provided by said act should it undertake to charge any rate in excess of that now being charged by it.

Sixteenth

These defendants further answering deny that the plaintiff is prevented and intimidated from putting into effect a schedule of rates for natural gas supplied to its patrons

which would yield to it an adequate return for the service rendered, because of any highly excessive or unusually severe penalties provided in the above mentioned suit, but, on the contrary, these defendants aver that the rates now in effect by the plaintiff yield to it an adequate return for the service rendered. These defendants say that it may be true that because of the fines and penalties prescribed by the above mentioned statute that the plaintiff is forced to keep in effect the requirements and schedules prescribed by the Public Service Commission, but these defendants specifically deny that the imposition, or threatened imposition, of such penalties forced upon the plaintiff an abandonment of its rights to act independently of the requirements of said [fol. 169] Public Service Commission, and these defendants specifically deny that the requirements of said Commission are void or illegal.

These defendants further deny that the plaintiff is deprived of its property without due process of law, or that it is compelled to produce, transport and deliver gas to its consumers for less than the actual cost thereof, to-wit, after allowing a sum sufficient to pay for the gas used and for the amortization of its plant for the reasons as alleged in the fifteenth clause of the plaintiff's bills of complaint, or for any other reason.

Seventeenth

These defendants further answering say that in such proceedings before said Commission certain protestants appeared in opposition to the rates proposed by the plaintiff company and that the names of such protestants are as follows: City of Charleston, City of Huntington, City of Williamson, Town of Ripley and Town of Ravenswood, all municipal corporations created and existing under the laws of the State of West Virginia, and Manufacturers' Club of Huntington, West Virginia, Dunkirk Window Glass Company, Westvaco Chlorine Products Company, West Virginia Brick Company, Standard Brick & Supply Company, Ward Engineering Works, Kanawha Brick Company, Kanawha Manufacturing Company, Kanawha Ice Company, Diamond Ice & Coal Company, Elite Laundry [fols. 170 & 170½] Company, Superior Laundry Company,

Charleston Laundry Company, Kanawha Woolen Mills Company, Charlton Lumber Company, all being corporations either organized under the laws of the State of West Virginia, or authorized to do business therein.

Defendants further say that said protestants have an interest in this action because of the matters hereinbefore set out, and that they are proper, if not necessary, parties to this action.

Eighteenth

Wherefore, these defendants pray judgment that the complaint of the plaintiff be dismissed with costs to the defendants.

Public Service Commission of West Virginia, Howard B. Lee, Attorney General of the State of West Virginia; Fred M. Livezey, Attorney for Public Service Commission of West Virginia, by Counsel. Fred M. Livezey, H. B. Lee, Solicitors.

[fol. 171] IN UNITED STATES DISTRICT COURT

[Title omitted]

ANSWER OF INTERVENING DEFENDANTS THE CITY OF CHARLESTON, A MUNICIPAL CORPORATION, CITY OF HUNTINGTON, A MUNICIPAL CORPORATION, CITY OF WILLIAMSON, A MUNICIPAL CORPORATION, TOWN OF RIPLEY AND TOWN OF RAVENSWOOD, BOTH MUNICIPAL CORPORATIONS, THE HUNTINGTON MANUFACTURERS CLUB, A CORPORATION, DUNKIRK WINDOW GLASS COMPANY, WESTVACO CHLORINE PRODUCTS COMPANY, WEST VIRGINIA BRICK COMPANY, STANDARD BRICK AND SUP-
[fol. 172] PLY COMPANY, WARD ENGINEERINGS WORKS, KANAWHA BRICK COMPANY, KANAWHA MANUFACTURING COMPANY, KANAWHA ICE COMPANY, DIAMOND ICE AND COAL COMPANY, ELITE LAUNDRY COMPANY, SUPERIOR LAUNDRY COMPANY, CHARLESTON LAUNDRY COMPANY AND KANAWHA WOOLEN MILLS COMPANY, FILED IN THE ABOVE STYLED CAUSE, BY LEAVE OF THE COURT

To the Honorable George W. McClintic, Judge of said Court:

Now come the defendants above named, by special leave of the Court, and for answer to the bill of complaint filed

by the plaintiff herein, without waiving their right to move to dismiss said bill of complaint and to object thereto for insufficiency, say;

That they, and each om them, except The Manufacturers Club of Huntington, are consumers of natural gas furnished by the plaintiff to said defendants in the State of West Virginia and in the Southern District thereof, and are all directly interested in the result of the proceedings mentioned in the bill of complaint as recently pending before the Public Service Commission of West Virginia, as well as the result of this suit in Your Honor's Court, and that the defendants, The City of Charleston, City of Huntington, City of Williamson, Town of Ripley and Town of Revenswood, are each municipal corporations of the State of West Virgina, and as such represent large numbers of citizens of said cities and towns, respectively, who are also consumers of natural gas and are purchasers thereof from the said United Fuel Gas Company within said State and District.

And now, for further answer unto the said bill of complaint filed herein, these defendants would respectfully show:

[fol. 173] First

Defendants believe it is true that the plaintiff, United Fuel Gas Company, is a corporation organized under the laws of the State of West Virginia, and is engaged therein in the production, transmission, distribution and sale of natural gas for light and fuel as alleged in the first paragraph of said bill; and defendants aver that the plaintiff is thereby a public utility company, engaged in the public service, and subject to the laws of the State of West Virginia regulating such utilities.

It is true The Public Service Commission of West Virginia is an official body created by said State and existing by virtue of the act of the legislature thereof, known as chapter 9 of the Acts of said legislature of 1913, and the several amendments thereto; and that said Commission is constituted as in said paragraph set out. It is true that Howard B. Lee is the Attorney General of the State of West Virginia, but defendants are not advised that he is "charged with the duty of enforcing the laws of

said State," but aver that he is designated by law as counsel for the state in all causes pending in any federal court in which the state is interested, as well as in various other cases specified by law. It is also true that Fred M. Livezey is counsel for said Public Service Commission, and that his duties as such are fixed by law.

Second

Defendants say it may be true that the cause attempted to be presented by the plaintiff's bill herein is of a civil nature, in equity, and is brought for the purpose of enjoining the enforcement of an order of the Public Service Commission of West Virginia, entered on the 24th day of March, 1925, which order refused to permit the plaintiff to increase its rates for natural gas service to its customers in the State of West Virginia; but the defendants deny that the plaintiff has any just cause of action arising under the constitution or laws of the United States; [fol. 174] deny that the rates which plaintiff is permitted to charge for such service are confiscatory of its property, or that the said order of the Public Service Commission deprives the plaintiff of property without due process of law, or denies to the plaintiff the equal protection of the law.

Third

Defendants say it is true that prior to the 26th day of April, 1924, certain rates had been fixed by the Public Service Commission of West Virginia, upon application of the plaintiff, which said plaintiff was permitted to charge for natural gas service in said state, as alleged in said bill of complaint; but defendants deny that said rates were inadequate, or failed to yield to the plaintiff a fair return upon its property devoted to such service. It is true that the plaintiff on April 26, 1924, filed with said Commission a schedule of increased rates, providing large increases in said existing rates, which it proposed to charge on and after the 31st day of May, 1924; and that upon the filing thereof the said Commission, pursuant to the provisions of the statutes of said state, suspended the effect of said rates for a limited time, and continued such suspension in force pending an inquiry as to the reason-

ableness of such proposed rates, and that after full hearings said Commission entered the order of March 24, 1925, complained of in the bill, canceling and annulling said proposed rates, on the ground that the same were unjust and unreasonable.

Defendants say that this suit is the latest step in the efforts of the plaintiff to obtain increases of rates for gas furnished to citizens of West Virginia, extending over many years, first upon one ground and then upon another, far in excess of those which it is justly entitled to charge.

The plaintiff engaged in the business of a public utility in 1909, and on May 21, 1917, filed its petition with the Public Service Commission for leave to increase its then rates to certain of its industrial and domestic consumers, for the alleged reason that the then rates did not afford [fol. 175] it an adequate return upon its investment or a return commensurate with the value of the service rendered to its patrons. It asked, among others, increase as follows: City of Huntington, from 15 cents net to 23 cents net for domestic, and a slight increase in gas over 300,000 feet per month for industrial consumers; City of Charleston, increase from 15 cents net to 20 cents net, and a slight increase of about one cent in industrial rates. When this petition was filed, the matters arising under it were set down for hearing on June 27, 1917. Protestants appeared, certain of these defendants, among others, and by protests and answers denied the necessity and propriety of increased rates, and asserted that the applicant was earning a reasonable return upon the fair value of its property used in the public service, and thereafter hearings were held from time to time before the Commission until the 6th day of October, 1917, when the same were concluded. On February 28, 1918, the Commission made its finding fixing the then total present value of the applicant's property as a rate base at $17,750,000, and after apportioning the investment and the operating expenses as among the various divisions of the property and the communities served, permitted the applicant to increase its rates in the City of Huntington for domestic gas two cents, and an increase of one cent at Charleston; made small increases for industrial gas at both places, and allowed certain slight increases in other communities affected.

In this case, known as No. 585, reported in volume 1, of the reports of the Public Service Commission of West Virginia, page 501, the matters of valuation, returns and rates were testified to and considered at great length, the valuation including a consideration of the gas reserves or gas in the ground, as well as the value of the tangible property of the plaintiff, but no effort was made by the plaintiff to affix a value thereto in the manner attempted in the evidence offered by the plaintiff at the hearing before the Commission beginning May 28 and June 30, 1924; that is to say, by asserting the existence in the [fol. 176] ground in the leaseholds of plaintiff of an estimated quantity of gas with an attempt to fix a value thereon.

On December 21, 1918, the plaintiff again filed with said Commission its petition and application for leave to increase its rates for domestic service to its consumers in the cities, towns, and villages in West Virginia served by it, among others, the cities of Charleston, Huntington, and Williamson, and to discontinue its industrial service to all of its consumers at all points in West Virginia. It asked that rates as to these defendants be increased as follows, namely: Charleston, domestic from 16 cents net to 25 cents net; Huntington, from 17 cents net to 30 cents net; Williamson, from 25 cents net to 30 cents net, and increases in other communities. By an amended petition and application filed May 15, 1919, the plaintiff asked that if discontinuance of its industrial rates were refused, the existing rates for industrial services should be increased to proposed rates as set forth in schedule filed, to continue in effect during the six winter months, and twenty-five per cent less than said proposed rates during the six summer months, and that just and reasonable rates should be fixed not only for its domestic gas service, but for its industrial gas service as well. Numerous protests were filed by practically every community affected by said proposed increase in rates, both as to domestic and industrial consumers. Upon motion of applicant, the evidence taken upon the application in Case No. 585 above was read and considered in so far as pertinent, and in addition thereto the applicant offered an inventory and appraisal of its gas properties, including its leaseholds and

the acreage therein, together with evidence as to the value of the gas-producing acreage operated and unoperated, and a value largely in excess of their investment cost was claimed. Evidence was offered as well by the protestants and the Commission on December 19, 1919, made its finding, fixing among others, rates as follows:

City of Charleston, Domestic, 20 cents net; Industrial, first, 150,000 20 cents net, second 150,000 19 cents net, all [fol. 177] over 300,000 15 cents net; City of Huntington, Domestic, 21 cents net; Industrial, first 150,000 21 cents net, second 150,000 18 cents net, all over 300,000 17 cents net; City of Williamson, Industrial, all over 300,000 12 cents net; and allowing certain increases in other communities involved.

The opinion of the Commission appears in Vol. 1 of the Reports of the Public Service Commission of West Virginia, page 651, and as will therefrom appear, the main question then mooted, involved and decided was the fair value of applicant's property for rate-making purposes, and especially what value, if any, should be assigned to applicant's leaseholds of gas-producing acreage. An effort was made by the applicant to have included in the valuation of its property the sum of approximately $31,000,000, in addition to the capitalization theretofore allowed, as representing what was claimed to be the appreciated value of its leaseholds already carried on its books at a valuation of about $6,500,000, which was largely in excess of the actual cost of said leaseholds, this contention by the plaintiff being founded upon what is termed "gas reserves," and upon the assumed and asserted value of which it maintains that the rates at this time in effect are confiscatory. Various other questions were involved, such as whether or not federal income, excess profits and war taxes should be treated as operating expenses, what credit should be made against the operating expense for the value of the use of gas for the manufacture of gasoline, the allocation of investment, earnings and expenses as between applicant's three branches of business—oil, gas, and gasoline—and others; and the Commission, for the purpose of allowing the increases as aforesaid, fixed the fair value of applicant's property at the sum of $30,000,000, and in its

ascertainment of future rates, allowed the applicant an additional earning annually of $1,000,000 that it might have $5,000,000 annually as net earnings for purposes of return, depreciation and amortization.

[fol. 178] No rehearing was asked by the plaintiff, nor did it seek an appeal to the Supreme Court of Appeals of the State, and the rates fixed by the Commission in said Case of 845, decided December 19, 1919, remained in effect until June 29th, 1921. On June 29, 1921, the plaintiff filed its application with the Commission for authority to again increase its rates, averring that notwithstanding the increases theretofore allowed it, those rates did not produce a reasonable return. In its said petition, the plaintiff assigned errors in the findings and conclusions of the Commission in Case No. 845 above, and prayed that they be reconsidered, reversed and set aside, and asked authority to put into effect its proposed changes in rates. The plaintiff in its petition requested in most, if not all cases, that the rates be doubled. On April 28, 1922, the Commission made its finding fixing the then fair value of applicant's property at $30,000,000 plus some net additions to capital made by the applicant since the decision of Case No. 845, and found that the rates asked for were not justified by the evidence, but that in order to supply a lack of adequate revenue amounting to approximately $200,000, the plaintiff should have and was granted an increase of 3 cents per M cubic feet in the last block of certain existing industrial rates. By its finding the Commission required the applicant to report, after six months' trial of the new rates allowed, its income and operating expenses, in order that upon such report any further adjustment in rates might be made which should be warranted by the facts.

No rehearing was applied for or any appeal sought by the plaintiff, and the rates so fixed by the Commission continued in effect until February 20, 1923, when the plaintiff, having theretofore on January 11, 1923, filed its said report as to six months operation, filed its motion in writing in which it asked that said case be set down for further hearing and investigation. The Commission granted said motion and successive hearings were had, at which testimony was offered by the applicant and then by the pro-

[fol. 179] testants, these defendants being among other pro-

testants, and the hearing proceeded with from time to time until the matter was submitted to the Commission, and on August 9, 1923, an opinion was handed down by the Commission authorizing the applicant to increase each of its rates temporarily in West Virginia five cents on each one thousand cubic feet, except at Nitro, prescribing the effective date of the increase for domestic and industrial consumers, requiring the plaintiff to file on or before March 20, 1924, a statement of its operating revenues, expenses and taxes for the period between September 1, 1923, and March 1, 1924, setting forth its revenue derived from gasoline and any changes in its rates to other consumers, and retaining the case upon the docket for the purpose of receiving such statement and taking such action thereon as the Commission may deem proper, and of obtaining further information from which to ascertain the proper depreciation and depletion which the plaintiff was entitled to earn. No rehearing was applied for by the plaintiff, nor any appeal sought by it, but certain of the protestants, and among others these defendants, applied for and obtained an appeal from the order of the Commission made August 9, 1923, to the Supreme Court of Appeals of the State of West Virginia, and at the same time an order suspending the said increased rates, pursuant to the provisions of the statutes of West Virginia, and in said Supreme Court of Appeals such proceedings were had that upon submission of the case on appeal, and on November 27, 1923, said court reversed and set aside the order of the Commission of August 9, 1923, and remanded said proceedings to the Commission for such further investigation and order as might be proper. No application for a rehearing was made by the plaintiff and no application was made by it for appeal, by writ of error, or otherwise to the Supreme Court of the United States from the said decision of November 27, 1923; and the case was remanded to the Public Service Commission of West Virginia and was pending before it when the bulletin was filed by plaintiff on April [fol. 180] 26, 1924, Exhibit B, with plaintiff's bill. Reference is now here made to the orders or findings of said Commission above; namely, in Cases 585, 845, 1251, and 1251 (second hearing), and to the opinion of the Supreme Court of Appeals of West Virginia in the case of The City

of Charleston vs. Public Service Commission of West Virginia, reported in 95 W. Va., page 91.

The Supreme Court of Appeals in its decision suspending and reversing the order of the Commission allowing said increased rate of five cents, reached its finding and reversed said order of the Commission for the reasons, among others, that any appreciated value of leaseholds must be shown by evidence independent of the rates of return or earnings; that proper consideration should be given to accrued depreciation and depletion; that a natural gas utility should not be permitted to sell the use of gas for extraction of gasoline to itself for a private enterprise for less than its fair market value or at prices that could be obtained upon the open market; that plaintiff should not be allowed to sell its gas to its parent companies at less than its fair market value, and where it does so, should be treated by the Commission as receiving a fair market rate for such gas, and for other errors, both of law and fact, committed by the Commission, as set forth in said opinion of the Supreme Court, and said court further found from the record in the case that the plaintiff was receiving an annual return of $554,000 in excess of the net revenue the Commission had found it entitled to earn upon the rate base of $34,000,000 as fixed by the Commission.

Defendants allege that upon motion of plaintiff, the proceeding initiated by its tariff or schedule of rates filed with the Commission on April 26, 1924, designated by said Commission as Case No. 1516, and the former proceeding remanded to the Commission by the order of the Supreme Court of Appeals of the State of November 27, 1923, were consolidated into one proceeding, designated as Case 1516. Defendants allege that after the submission of all plain-[fol. 181] tiff's exhibits and evidence in said hearing before the Commission, and after plaintiff had rested its case, but before the defendants had introduced any evidence, plaintiff on August 4, 1924, filed its bill of complaint in the District Court of the United States for the Southern District of West Virginia, in which it prayed that a temporary restraining order be awarded by said court enjoining and restraining the Commission and each member thereof from proceeding further in the determination of the issues involved in said proceeding before it and from further suspending the said tariffs so filed by said plaintiff, and en-

joining and restraining the Attorney General of the State of West Virginia and the Counsel for the Public Service Commission from interfering with the rates so filed. Defendants allege that the defendants to the bill in this case and others were permitted by said Court to intervene and file their answer in said proceeding, which they accordingly did, and said District Court on September 2, 1924, entered its order refusing the injunction prayed for by the plaintiff. Thereafter, the plaintiff applied to the statutory court of three Judges sitting under section 266 of the Judicial Code. (Comp. Stat. Sec. 1243), for a preliminary injunction, which application, after full hearing and argument, was refused by said court by its order made on the 13th day of September, 1924, upon the ground that the plaintiff had failed to show it was entitled to the relief prayed for.

Fourth

Defendants say it is true that upon the hearing before the Commission commencing May 28, 1924, the plaintiff showed that it held or claimed certain rights in respect to the gas in something over 800,000 acres of land, with producing wells, transmission lines and distributing systems; but defendants deny that the plaintiff showed to said Commission the true value of said properties. It is true the plaintiff ordered an inventory and appraisal of its property made by or under the direction of the firm of Ford, Bacon [fol. 182] & Davis, of New York City, which firm was employed by plaintiff for that purpose; but defendants call for proof of the allegation of the bill as to the methods employed by said firm in making its said appraisal. Defendants say that of the enormous acreage in which the plaintiff claims to hold the "gas rights" as alleged in the bill, according to the testimony of its witnesses only 68,900.72 acres are classed as "operated," and that of the whole, but 136,384 acres are designated as "proven" territory; and they further aver that the appraisal submitted by said firm of Ford, Bacon & Davis as to many items therein is palpably erroneous, unreliable and inaccurate, and especially as to its several efforts to fix a value upon the so-called "gas rights" held by the plaintiff.

Defendants deny the accuracy of the allegations in the bill as to the amounts found in said appraisal of Ford,

Bacon & Davis as the reproduction cost new of said properties, and of the same less observed deterioration, and defendants deny the implication of plaintiff's bill that the terms "reproduction cost new less observed deterioration" and "present value" are synonymous, and defendants aver that the values found in the said appraisal are as follows: reproduction cost new, $73,803,601; and not $74,493,601; and reproduction cost new less observed deterioration (which is not "present value" as alleged in plaintiff's bill) $65,080,496 and not $66,070,496. The difference between the amounts stated in the plaintiff's bill and in the appraisals made by Uebelacker is $990,000, the allowance for working capital. The witness Uebelacker fixed $36,449,176 as the value of plaintiff's gas rights, and $37,054,425 as the value of its physical properties if the same had been entirely new, and $28,631,320 as the reproduction new value of the physical property, less observed deterioration, which last amount added to the appraisal value of the gas rights makes $65,080,496.

As to the averment of plaintiff in its bill that the witnesses for the protestants and for the plaintiff were in substantial accord as to the items of property included in the [fol. 183] inventories of Ford, Bacon & Davis, defendants assume that said averment is intended to be limited to items of the physical properties of plaintiff. If so, defendants say that the matter of the substantial accord of such witnesses is of no possible relevancy to plaintiff's case now, inasmuch as the defendant Public Service Commission, as hereinbefore shown, accepted the figures of plaintiff's witnesses as to the reproduction cost new of the physical plant, as well as the estimate of observed deterioration presented by said witnesses. Defendants admit and allege that there were differences of opinion between the witnesses for plaintiff and for the protestants as to the measure of existing depreciation and as to the allowance for overhead charges, but defendants call attention again that these questions were all resolved in plaintiff's favor by said Public Service Commission, when it accepted said valuation of the physical plant in its observed depreciated condition. These defendants deny that the testimony of said engineers as to the reproduction cost new, less depreciation, of plaintiff's physical property, is the only measure, or a proper measure,

of the present fair value thereof; but aver that the same is proper evidence to be considered in arriving at such present fair value for rate-making purposes; and the defendants aver that the Commission did in fact give due and ample consideration to said evidence in arriving at the decision complained of; that a great deal of additional evidence of said such present fair value was before the Commission, including the proper elements of estimated historical cost as submitted by witness Uebelacker, and book cost of said physical properties (shown to be $25,480,878.33 and $19,945,582.16, respectively); and that all of said evidence was likewise entitled to consideration and to be given its due weight in fixing the present fair value of said physical plant, and the defendants aver that the Commission gave consideration to the use to which the plaintiff's property is put, the book cost, the estimated historical cost, the reproduction cost new less depreciation estimates, and made [fol. 184] a careful and painstaking examination of the record, and found that the physical property of the company had a present fair value as of December 31, 1923, of $25,000,000, to which it added the sum of $648,457.72 for completed construction to November 30, 1924.

Defendants deny that their engineer or any witness was employed by them to overthrow the testimony of Ford, Bacon & Davis or any witness introduced by plaintiff. On the contrary, defendants allege that the sole object of the witnesses for the defendants in this connection was to determine the present fair value of plaintiff's property used and useful in the public service as of December 31, 1923, and to point out various errors and inconsistencies in the evidence of plaintiff's witnesses, which, as appears from the record of the hearing before said Commission, was accomplished.

Fifth

Defendants say it is true that the plaintiff company in the proceedings before said Commission offered testimony by its witness Ralph E. Davis, attempting to show the amount of gas which might be expected to be produced from the lands held under lease and otherwise by the plaintiff and the estimated value thereof, but the defendants say that said testimony was so speculative, indefinite and un-

certain as to be of no value whatever in arriving at the fair value of the rights of the company with respect to such gas, and they also aver that such testimony was wholly immaterial and improper in said proceeding.

It is also true that the said firm of Ford, Bacon & Davis undertook to ascertain the value of said gas, basing their estimates upon information furnished by said Davis; and defendants aver that such purported evidence is likewise speculative, indefinite and uncertain, and also is improper and immaterial for the reason that it disregards the fact that the gas in question is not owned by the plaintiff, as well as for other reasons.

The plaintiff also offered the testimony of a number of [fol. 185] individuals, as stated in the bill, with reference to the so-called gas rights of the plaintiff, but the defendants say that such evidence was likewise incompetent, irrelevant and immaterial and of no probative value on the issues involved. The defendants deny that the evidence of said witnesses was not controverted by other evidence in the case; on the contrary, the defendants say that there was ample evidence adduced before the Commission showing the book cost of the lands held by the plaintiff in fee and under lease, the cost to the plaintiff of renewing, securing and carrying the same and various other matters affecting the value of the said properties; and defendants further aver that the improper, indefinite and speculative character of all of the testimony offered by the plaintiff as to the value of the gas rights claimed by it rendered the same incompetent to support any such finding as was asked by the plaintiff, and made extended evidence in contradiction manifestly unnecessary. Defendants deny the allegation of the bill that the evidence of plaintiff justified a finding of a value of at least $30,000,000 for said gas rights, or any finding in excess of the sum found by the Commission. Defendants say that they have not seen the transcript of the testimony marked "Exhibit Transcript" purported to be filed with plaintiff's bill. Defendants herewith reserve the right to file the record of all testimony taken before said Commission in said hearing, together with all exhibits, which may not be included in said Exhibit Transcript in plaintiff's bill.

Sixth

Defendants admit the allegations of paragraph "Sixth" of said bill, and refer to the order and opinions of the said Public Service Commission therein referred to for a correct statement of the findings of said Commission.

Seventh

In paragraph "Seventh" of said bill, the plaintiff proceeds to set out certain interpretations and constructions [fol. 186] of the decision of the Public Service Commission complained of, which defendants believe to be so incorrect and misleading as to render said paragraph entirely unreliable as an aid to the understanding of said decision, or as throwing light upon the issues involved in this case.

It is true the said Commission in certain of its findings adopted the views of the witness Uebelacker as against criticisms of the same advanced by protestants' witness Hagenah, but for a more accurate statement of such findings the defendants refer to the opinion of the Commission filed herein.

It is true the Commission fixed the going value of plaintiff's property at $3,000,000, and allowed it working capital in the amount of $990,000, as to which last amount the witnesses were in accord. Defendants deny that "this would make a total present fair value of the physical property, including going concern value and working capital, of $32,621,320." It is apparent that this amount is the sum obtained by adding the allowance for working capital, $990,000, and the going concern value, $3,000,000, to $28,631,320, the reproduction cost new less observed deterioration of the physical plant. In this allegation, plaintiff continues to confuse "present fair value" and "reproduction cost new less depreciation." It is true the Commission eliminated the sum of $254,332, as the cost of certain "dry holes" drilled by plaintiff from the valuation fixed by it, which the defendants allege was properly eliminated from the rate base. Defendants say that it is true that the Commission found the present fair value of plaintiff's physical property to be $25,000,000, but defendants deny that it arrived at the sum "because of the fact * * * that this prop-

erty did not cost that much" ($32,366,888), as alleged in said bill, and deny the allegation that "it is not apparent from the opinion of Commissioner Stathers how he arrives at this $25,000,000." On the contrary, defendants say it is apparent that throughout said paragraph "seventh" the plaintiff seeks to confuse the testimony of [fol. 187] "reproduction cost new less depreciation" with present fair value, when as a matter of fact such reproduction cost is merely one element to be considered in arriving at the ultimate fact, namely, present fair value, which is to be found by the Commission. In addition thereto, the Commission was bound to consider and did consider, other elements, including estimated historical cost of $25,480,378.33, as testified by plaintiff's witness Uebelacker, and the book cost of $19,945,582.16, as to the correctness of which there was no controversy.

It is true that of the alleged capital expenditures of $2,000,676.57 made subsequent to December 31, 1923, the Commission allowed but $648,457.72 (instead of $666,639.47) as part of the value of the physical property, for the reason, as set forth in the opinion of the Commission, that no more than this amount represented construction completed and in the service of the public; and defendants say that it is not clear from the evidence in the case that even this amount was in actual use, and that the whole evidence as to such subsequent expenditures was indefinite and inconclusive.

Defendants deny that in fixing the present fair value of the plaintiff's physical plant at the sum of $25,648,457.72, the Commission places such value at $9,000,000 less than the actual present fair value thereof, and say that such allegation could only be made through a confusion and juggling of figures such as above pointed out.

Defendants allege that the following statement tabulated from the figures contained in Paragraph Seventh of the plaintiff's bill shows plaintiff's method of arriving at its erroneous conclusion that the said Commission fixed the value of plaintiff's physical property at $9,000,000 less than its actual present fair value:

Reproduction Cost new of physical property less observed deterioration, as determined by Uebelacker	$28,631,320.00
Working capital	990,000.00
[fol. 188] Going value	3,000,000.00
Alleged additional capital expenditures since December 31, 1923	2,000,676.57
Total	$34,621,996.57
Deducting commission's finding as to present fair value of physical plant, omitting working capital and going value	25,648,457.72
	$8,973,538.85

The facts as to the findings of value going into the rate base as found by the Commission and set forth in the opinion of Chairman Stathers are shown by the following table:

Fair value of physical plant, December 31, 1923	$25,000,000.00
Additions subsequent to December 31, 1923	648,457.72
Present fair value of physical plant	25,648,457.72
Allowance for working capital	990,000.00
Going concern value	3,000,000.00
Present fair value of plaintiff's physical plant, including working capital and going value	29,638,457.72
Value of gas rights and leaseholds, (see next paragraph)	6,361,511.42
Total, rate base, or present fair value	$35,999,969.14

The defendants further deny that said finding constitutes a taking of the plaintiff's property without just compensation in violation of the Fourteenth Amendment to the Constitution of the United States.

Eighth

[fol. 189] In answer to paragraph "eighth" of plaintiff's bill, defendants say: That the Commission by its opinion and decision found upon all the evidence before it that the fair value of certain leaseholds and natural gas rights held by the plaintiff was the sum of $6,361,511.42; but defendants deny that this is the sum which was actually paid for such leases by the plaintiff or its predecessors at any time, and aver that the aforesaid sum, while carried upon plaintiff's books as the cost of such leaseholds, in truth and in fact represented a very considerable enhancement over such actual cost. Defendants aver that the actual cost of the leases now held by the plaintiff would not exceed the sum of $3,000,000, and that there was evidence adduced before the Commission by the defendants showing the actual amounts now being paid in the gas fields of the plaintiff for such leases, which amounts were shown to be decidedly less than the value found by the Commission. Defendants aver that the plaintiff offered no competent evidence before said Commission as to the present fair value of such leaseholds, as is pointed out in the opinion filed by the Commission; and defendants deny that the plaintiff has paid out the sum of $8,817,909.96 as rentals or carrying charges upon the leases held by it, if by such allegation the plaintiff means to imply that it has invested such amount of its own capital, the facts being that such carrying charges upon leaseholds have at all times been treated as operating charges and collected annually from the consumers of gas sold by the plaintiff, over and above a fair rate of return upon the value of its property devoted to public use, and for such payment defendants contend said consumers should be given due credit in the fixing of rates, and the same should not be treated as an added investment by the owners of the utility.

Defendants deny emphatically that the plaintiff under any circumstances should be allowed a return of from 25% to 100% per annum upon the amount of its invest- [fol. 190] ment in gas properties when devoted to the public service; and while defendants admit that an investor in oil or gas properties is entitled to such return as may accrue to him from the development of such properties,

when not devoted to public use, yet the defendants do not admit, but deny, that it is usual or ordinary for such investors to receive annual returns of from 25% to 100% on their investments, even when the best of judgment is used in acquiring and developing such properties. Defendants allege, however, that the record of the hearing amply shows that plaintiff, as a matter of fact, has been rewarded for its business judgment and that its adjusted net earnings from 1909 to 1924, inclusive, are approximately $60,000,000 upon a book cost varying from $10,000,000 in 1909 to not more than $25,000,000, in 1924. Defendants further say that all such allegations are immaterial as applied to a public utility operating under laws which impose upon it, in return for certain privileges and immunities, the duty of furnishing service to the public at a fair price and for a reasonable return upon the value of its property.

Defendants further say that it was shown by the testimony adduced before the said Commission that the plaintiff company in the year 1909 acquired 21,519.99 acres of operated gas territory, and 1,034,923.59 acres of unoperated territory, from certain other corporations then owning and operating the same; that it subsequently acquired more than 1,000,000 acres of additional territory, and sold or abandoned approximately 1,300,000 acres, and that it drilled and developed certain additional acreage until on December 31, 1923, it owned and operated 68,900.72 acres of operated territory, and 746,009.96 acres of unoperated territory, from which it will appear that the investment of the plaintiff in said property in 1909 was in no sense a hazardous venture into wholly unproven gas fields for which the plaintiff should be granted the extortionate profits suggested in the bill, but the defendants say that in [fol. 191] fact the said plaintiff in the year 1910 sold and marketed from said territory a total of nineteen billion cubic feet of gas, as against total sales in 1923 of forty-six billion cubic feet.

The defendants further say that the territory of approximately 1,000,000 acres acquired by the plaintiff since 1909 has cost said plaintiff about $1.00 per acre, and that the prices actually paid by the company for such leases in its best producing fields during the years 1922 to 1924 averaged

$4.00 per acre. They, therefore, aver that it is only duplicating and adding the cost of new leases to the book cost of old leases which have expired, and by arbitrary charges by way of "appraisal" that the plaintiff was enabled to build up the so-called book cost of $6,361,511.42 which the Commission allowed in said case as the present fair value of said leaseholds, and that of said amount there is an appreciation of value of $5,000,000 over the actual cost of said leaseholds; and defendants further aver that in fact no such amount can be shown to represent actual investment in such leaseholds, or to represent the reproduction cost of the same at this time, and defendants say that, as above shown, under the evidence before the Commission said leaseholds could be reproduced at this time for not to exceed the sum of $3,000,000. Defendants say that the plaintiff having been permitted to impose the burdens of said leases upon its customers by the collection of all carrying charges and expenses as operating costs, it now apparently seeks to capitalize for its own profit merely the beneficial provisions and elements of such leases at a fanciful and artificial value, which if permitted would impose a double burden upon the consumers without any corresponding investment on the part of the plaintiff.

Defendants deny that the evidence offered before the Commission by the plaintiff as to the present fair value of its gas rights was competent or proper, and deny the allegations that the same was not in any way disputed or controverted, and deny that on the basis of the evidence [fol. 192] before the Commission the present fair value of such gas rights is the sum of $30,000,000.00, or any larger sum than the amount found by the Commission as aforesaid; and the defendants further aver that such evidence in fact was insufficient to justify as large an amount as that found by the Commission. Defendants deny that the action of the Commission in fixing the value of such gas rights and leaseholds, and in denying the plaintiff the right to charge a rate which would produce a return upon an additional $25,000,000 or any other sum on account of such leaseholds, operates to deprive the plaintiff of any property, or that such action is in violation of the Fourteenth Amendment to the Constitution of the United States.

The defendants here call the Court's attention to the fact that neither in the bill herein, nor in the evidence and pro-

ceedings before the Commission, has the plaintiff offered to show the nature and extent of the so-called "gas rights" claimed or held by it; that only a very small part of said total acreage consists of fee ownership of said natural gas, but that by far the greater part consists of certain leasehold rights with respect to the production of gas from said lands, the exact nature of which is not shown; but from general knowledge of such leases the defendants say that they are of indefinite and uncertain value, depending upon a great variety of conditions and circumstances, that the rights held thereunder are usually subject to loss by forfeiture, surrender and other contingencies, and that such leases impose upon the lessee certain burdens and obligations in addition to the rights granted thereby. Defendants aver that the plaintiff did not produce evidence before said Commission as to the value of said leases, as such, nor as to the exact nature and extent of the rights claimed by it thereunder.

Ninth

Defendants say that the actual amount found by the Commission as the present fair value of plaintiff's property, [fol. 193] upon which it was entitled to earn "operating expenses and taxes, an amount sufficient to take care of deterioration or depreciation, a sufficient sum to amortize or retire over the remaining period of its life the unamortized portion of its property, and a fair return," was the sum of $35,999,969.14; and defendants deny that the action of the Commission in fixing such value, and denying to plaintiff the right to charge a rate which would yield a return upon the enormous values contended for by it, amounts to taking the plaintiff's property for public use without compensation to any extent whatever, or that the same is in violation of the Fourteenth Amendment to the Constitution of the United States, or any other part thereof. Defendants say that said Commission, having found the fair value aforesaid, proceeded to permit the plaintiff to continue to charge rates, theretofore in effect, which in fact yield a fair return upon a much larger sum than the rate base so found; wherefore, the defendants say that the Commission would have been fully justified in ordering a considerable reduction in the rates being charged by the plaintiff.

Tenth

It is true that the said Commission fixed the fair value of plaintiff's property upon which it was entitled to a return, in the aggregate, at $35,999,969.14, and adjudged that it was entitled to a return of 8% upon this amount, over and above operating expenses and taxes, and that it was also entitled to earn 1½% upon the book cost of its properties for the purpose of a depreciation fund; and the Commission further allowed the plaintiff to earn 4.15% upon the present fair value of its properties as an amortization fund, for the purpose of returning to the plaintiff the value of its said properties at the end of their useful life; and it is true that said Commission found that approximately $20,000,000 was the portion of said present fair value which had not already been amortized and returned to the plaintiff as shown by the opinion of the Commission filed herein, [fol. 194] and that the said 4.15% would fully retire said unamortized portion within the life of the property. Defendants aver that the Commission found the fact to be that the plaintiff had actually earned and had returned to it during the years 1916 to 1923, under rates prescribed by the Commission, for the purpose of amortization of investment alone, the sum of $14,028,737.03, which sum did not include any amortization earned and applied by the company to its uses prior to 1916, nor any excess earnings which accrued during said period of 1916 to 1923, over and above the legitimate earnings to which it was entitled, and that the Commission thereupon deducted the said sum of $14,028,737.03 from the present fair value and found that the said sum of approximately $20,000,000(?) represented the amount which the plaintiff was entitled to have returned to it in the future by way of return of capital invested; but defendants deny that such action results in permitting the public to take the plaintiff's property and use it by paying only $20,000,000 therefor, for the reason that more than $14,000,000 of the value thereof has already been returned to the plaintiff.

These defendants contended before the Commission, and they now believe and aver that the true purpose of an amortization fund is to return to the investor in the natural gas business the full amount of its investment at the ter-

mination of the useful life of the utility, and that it is improper to use such fund as a means of profit to such investor in addition to the fair return permitted upon the value of its property by law; they, therefore, aver that the Commission erred in its said decision in holding that the plaintiff was entitled to a return of capital by way of amortization in excess of the amount of its investment, and say that the plaintiff should have been held entitled only to amortize the amount of the book cost of its several properties, a very large part of which defendants aver has already been amortized; and defendants deny that the plaintiff upon any [fol. 195] theory should be permitted to amortize an amount in excess of the present fair value of its property, as adjudged by the Commission. Defendants, therefore, aver that the correct principle is that expressed by Commissioner Divine, namely, that if it is held that the rate base is the amount to be amortized, then the consumers are not only paying a return upon a value far in excess of the amount actually invested, but they are required to pay to the owners of the company for amortization millions of dollars in excess of what has been actually paid out by them. Defendants deny that the valuation claimed by the plaintiff for its physical property is practically $9,000,000 less than said property would cost new, and that the gas already taken from plaintiff's field would make up the balance of the amortization fund already earned, and deny that it was for the purpose of taking care of said sums that the amortization fund was created, and further deny that to deduct the accrued amortization from the present fair value is to take it off twice. Defendants further deny that the action of the Commission as to amortization, as above set out, deprives the plaintiff of its property without compensation or is an appropriation thereof to the public use without compensation, in violation of the Fourteenth Amendment to the Constitution of the United States; and deny that it would take practically 8% to amortize the full present fair value of plaintiff's property within the probable life thereof, or that such rate has been allowed for the purpose of amortization heretofore. The defendants say that the plaintiff has heretofore been allowed the following rates by the Commission, to cover both amortization and depreciation: 1916 to 1918, six per cent; 1919 to 1922,

eight and six tenths per cent; and 1923 to date, eight per cent.

Defendants allege that as a result of said allowances by the Commission there accrued to the plaintiff for purposes of amortization during the years 1916 to 1923, inclusive, the sum of $14,028,737.03, and defendants allege that while [fol. 196] said sum was the total amount applied by the Commission for all accrued amortization, yet the Commission clearly indicated, and the fact is, that an additional sum of at least $8,639,590.81 in excess of the sums necessary to provide a fair return to the plaintiff, and to pay operating expenses, was earned by plaintiff during the years 1909 to 1916, when plaintiff was not subjected to public service regulation, which last mentioned amount in right and in law should be applied to plaintiff's accrued amortization account, and which would reduce accordingly the amount which these defendants and other present gas consumers should be charged for amortization allowances.

Defendants further say that in the foregoing calculations they have taken no account of the excessive earnings of plaintiff during the period 1916 to 1923, over and above a proper amount for fair return and all allowances for amortization, depreciation, operating expenses and other proper allowances as authorized by the Commission during said period. These excess earnings defendants allege are not less than $11,268,845.75, and constitute a proper addition to plaintiff's accrued amortization account. Defendants allege, therefore, that even assuming it to be correct that amortization is to be computed on the basis of value rather than investment, plaintiff's entire properties are substantially amortized.

Eleventh

Defendants say it is true that in determining whether plaintiff was entitled to an increase in rates, the Commission proceeded to ascertain the total income of the plaintiff from all sources, and having ascertained the same it found that such total income was producing a sufficient return upon the present fair value of plaintiff's property as found by it; and defendants deny that the Commission in so doing failed to reach a just conclusion. It is true that a large part of plaintiff's gas is sold in this state to

persons other than retail consumers thereof in this state, but defendants deny that a large part thereof is sold at a [fol. 197] higher rate than is received from the public service consumer in West Virginia. Defendants aver that plaintiff's sales to public service consumers in other states are small. Defendants say that the evidence before the Commission demonstrated that the plaintiff is receiving more than a fair and just return upon the portion of its gas which is sold to consumers in this state, regardless of what may be received for the remainder thereof sold in other states, and that in adjusting the total revenues of the company, as the Commission did, to compensate it for large quantities of gas transferred by the plaintiff to its parent companies at nominal prices, it is only fair, and it has been so held in this case (City of Charleston v. Public Service Commission, 95 W. Va. 91, syl. pt. 8), to require said gas to be accounted for at its fair market value, which said Commission found to be $2,143,661.46 in excess of the amount actually charged the parent companies in the year 1923 for gas taken by them. Defendants aver that it appeared in this cause that the total cost of distributing such gas to local consumers thereof was a maximum of 4.5 cents per M cubic feet, instead of seven cents, as alleged in said bill, the actual cost to the company being 3.71 as shown by its books.

Defendants say that the illustration and argument attempted to be made in paragraph eleven of plaintiff's bill is inaccurate and leads to improper results, for the following reasons: First, that the cost of distribution of gas to the public service consumers is not seven cents, as therein stated, but a maximum of 4.5 cents per thousand cubic feet; second, that said illustration takes no account of the revenues which are derived from the gasoline business of the plaintiff and properly credited to operating expense; and third, that certain other adjustments are overlooked, such as expenses properly chargeable to oil department, and other expenses mentioned in the opinion of the Commission. The credits which should be made to operating expenses under "second" and "third" above amount to more than two cents per M cubic feet. Defend- [fol. 198] ants aver that if the said illustration be properly worked out, using the proper data, it will be found that "the average rate for the public service consumers in West

Virginia" referred to in said illustration should be 19 cents instead of 23½ cents. Defendants aver that said rate as computed in plaintiff's illustration is less than the average rate paid by said public service consumers in West Virginia, which is 20.27 cents per M cubic feet; in other words, the evidence establishes that the public service consumers in West Virginia are actually paying a higher rate than would result under plaintiff's illustration.

It is true that the Commission added to the actual receipts of the plaintiff from gas sales the difference between the amounts actually received by it from sales to its parent companies and the amounts which it should properly have paid therefor, and also certain amounts it received from the sale of gasoline made from its gas properly creditable to operating expenses, in order to arrive at the proper gross income with which plaintiff is chargeable. Defendants are not advised as to whether the Commission reduced the plaintiff's income in any amount for alleged excess prices received from either wholesale customers or others outside the state, or whether the Commission considered any additional income taxes which might have been properly chargeable to the company had it received such additional income; but these defendants deny the validity of such proposed adjustments, and say that in any event the amounts involved therein would be inconsiderable and insufficient to effect the ultimate results found by the Commission, or to change the rates established, which the defendants aver are still much higher than the facts in the case warrant.

Defendants specifically deny that the holding of the Commission herein that the plaintiff is now receiving from the public service consumers in West Virginia a fair return upon the value of its property devoted to the public service in said state operates to deprive said plaintiff of its property without compensation, or that the same is in [fol. 129] violation of the Fourteenth Amendment to the Constitution of the United States.

Twelfth

It is true that the Commission, in arriving at its conclusions, found that the plaintiff justly should receive from the Virginian Gasoline & Oil Company, one half of the net

profits arising from the manufacture of gasoline by that company from the gas owned by the plaintiff; which finding the defendants say in correct and just, and amply justified by the facts and by the evidence adduced before the Commission. Such finding is in accordance with the holdings of said Commission, and of the Supreme Court of Appeals of the State of West Virginia, with reference to the plaintiff's business ever since the manufacture of gasoline from natural gas was commenced. It is true that the plaintiff has recently transferred its gasoline plants and its oil properties to said Virginian Gasoline & Oil Company, together with the privilege of extracting the gasoline from the natural gas produced and handled by the plaintiff, for which privilege a royalty of one-eighth of the gross amount received by the grantee company for such gasoline was purported to be reserved by contract; but defendants say that such royalty does not represent a fair compensation for such privilege, and that the said Virginian Gasoline & Oil Company is an associated and allied corporation of the plaintiff, all its stock being held by the stockholders of the plaintiff and in like proportions; and that it would be highly inequitable to permit a company engaged in the public service to make a sale of such a valuable asset to itself at a grossly inadequate price, fixed by itself, to the detriment of the public service customers of the utility, as is sought to be done in this case; and for these and other reasons the Commission rightly found that such purported reservation of one-eighth royalty was not fair to the consumers of the plaintiff, and not binding upon the Commission, but by reason of the evidence as to the value [fol. 200] of such gasoline privilege fully adduced before the Commission upon said hearings, it did find and so adjudged that the plaintiff should account to its public service consumers for a fair compensation which was fixed at one-half of the net profits arising from the manufacture of such gasoline, as aforesaid. Defendants say that said finding is eminently fair and just to the plaintiff and amply justified by the facts and evidence; and that such holding does not have the effect of relieving the public service consumers from the payment of a fair return to the plaintiff for the gas furnished to them, as alleged in the bill; and defendants allege that as to the right of defendants and other con-

sumers of plaintiff to compel plaintiff to account to them in the rates charged them, for one-half the net profits of the gasoline extracted by said Virginian Gasoline & Oil Company, despite plaintiff's alleged sale of said gasoline properties to said Virginian Gasoline & Oil Company, that question has been settled by the decision of the Supreme Court of Appeals of West Virginia in this same case, and plaintiff cannot now reopen the matter, especially in view of plaintiff's failure to appeal from or take any other legal exception to said decision. Defendants, therefore, deny that by such holding the plaintiff is deprived of its property without just compensation, in violation of the Fourteenth Amendment to the Constitution of the United States.

Thirteenth

The defendants believe it is true in the main that the business of the plaintiff has been conducted efficiently and economically, but they say that in at least two respects such allegation is not true, namely, that the plaintiff has for many years spent, and apparently is still spending, a large part of its income, approximately several hundred thousand dollars, at the expense of its consumers, in litigation having for its object the increasing of rates to said consumers; and that it has also spent large and unjustifiable amounts in newspaper advertising designed to ally [fol. 201] any opposition on the part of the public to such exorbitant increases in rates; the expense of all of which voluminous advertising, and propaganda, amounting to approximately fifty thousand dollars annually, is caused to be borne by the plaintiff's consumers of gas.

Fourteenth

Defendants allege that an additional complete refutation of plaintiff's averment that it has been denied a fair return upon the value of its property devoted to public use, consists of a review of the vast earnings of plaintiff since its organization in 1909. Defendants allege that plaintiff's original and sole investment of capital, aside from earnings and numerous reappraisals of its properties, was not more than $4,000,000. Upon this investment its net earnings to December 31, 1923, aggregated the enormous sum of $46,

087,749.11, and adding thereto the adjusted profits accruing to the stockholders of the plaintiff through preferential rates to its affiliated companies; such net profits amount to the sum of $53,340,656.21 and defendants aver that to date such profits aggregate more than $60,000,000. Plaintiff's cash dividends alone from 1916 to 1924, inclusive, exceed $27,000,000. Defendants aver that the figures so set out are clearly established by the books of the company and the evidence herein.

Fifteenth

The defendants say it is true that under the provisions of the Act of the Legislature of West Virginia creating the Public Service Commission, any person violating the provisions thereof, or a valid order of said Commission, is subject to certain penalties therein enumerated, but the defendants deny that such penalties are in any wise unjust or unreasonable; and they specifically deny that the plaintiff is prevented from putting into effect any rate which would afford to it reasonable compensation for the service rendered to its patrons, without being made subject to said fines and penalties; and defendants say that under said Act [fol. 202] it is the duty of said Commission to determine and prescribe just and reasonable rates to be charged by the plaintiff for natural gas service, and it is the duty of the plaintiff to accept such rates and render service therefor.

The defendants admit that the said Howard B. Lee, Attorney General, and Fred M. Livezey, Counsel for the Public Service Commission, are charged with the duty of enforcing the provisions of said Act, and the defendants have no doubt they would do so in all proper cases.

Sixteenth

The defendants deny that the plaintiff is prevented and intimidated from putting into effect a schedule of reasonable rates for natural gas because of the alleged excessive and severe penalties of the statutes of West Virginia aforesaid, or because of the order entered by said Commission as aforesaid; and deny that because of the said statutory penalties and acts of the Commission the plaintiff is forced

or caused to abandon any of its legal rights, and that plaintiff is thereby deprived of property without due process of law or compelled to transport and deliver gas to its consumers for less than the actual cost thereof after allowing a sum sufficient to pay for the gas used and for the amortization of its plant. And the defendants aver that the rates proposed by the plaintiff to be put into effect, as shown by its schedule filed before said Commission of April 26, 1924, and now asked to be put into effect by the injunction of this Court, are unreasonable and grossly unjust to these defendants and the other consumers of natural gas furnished by the plaintiff; and that they are approximately double the highest rates heretofore established in any of the numerous proceedings in which the plaintiff has sought increased rates before said Commission, as shown in the record; and the defendants aver that such proposed rates are without evidence to sustain them, are unreasonable, unfair and grossly excessive.

And the defendants deny that the said order of the Pub- [fol 203] lic Service Commission entered on the 24th day of March, 1925, is void or invalid for any reason set out in said bill of complaint, or for any reason whatsoever; and deny that this Court should enjoin the enforcement thereof, or by injunction permit the plaintiff to put into effect the increased schedule of rates proposed by it; and deny that this Court should make any inquiry or finding as to a just and reasonable rate to be charged by said plaintiff, or that this Court has any power to fix rates to be charged by the plaintiff for natural gas service; and deny that a temporary restraining order should be issued herein as prayed for.

And now having fully answered, these defendants pray that the plaintiff's said bill of complaint be dismissed, the injunction and temporary restraining order prayed for refused, and that they be hence dismissed with their reasonable costs.

The City of Charleston, City of Huntington, City of Williamson, Town of Ripley, Town of Ravenswood, The Manufactu-ers Club of Huntington, Dunkirk Window Glass Company, Westvaco Chlorine Products Co., West Virginia Brick Company, Standard Brick & Supply Company, Ward Engineering Works, Kanawha Brick Company, Kanawha

Manufacturing Company, Kanawha Ice Company, Diamond Ice & Coal Company, Elite Laundry Company, Superior Laundry Company, Charleston Laundry Company, Kanawha Woolen Mills Com-
[fol. 204] pany, by Counsel. H. D. Rummel, A. G. Stone, Donald O. Blagg, for the City of Charleston. C. W. Strickling, Paul W. Scott, for the City of Huntington. Geo. S. Wallace, for the Manufacturers Club of Huntington. Harry Scherr, Price, Smith & Spilman, for City of Williamson. R. S. Spilman, Retail Consumers of Charleston. T. J. Sayre, F. B. Morgan, for Towns of Ripley and Ravenswood.

[fol. 205] In United States District Court

[Title omitted]

Journal Entries of Trial

Motion for Temporary Restraining Order—Apr. 17, 1925

This day came the plaintiff, United Fuel Gas Company, by Harold A. Ritz, its counsel, and shows to the court that the summons in the above entitled cause has been duly served upon all of the defendants named therein, and that a copy of said summons was also served upon the Governor of the State of West Virginia, and further, that a copy of the order entered herein on the 2nd day of April, 1925, requiring said defendants to show cause why a temporary restraining order should not be granted, has also been served upon all of said defendants, as well as upon the Governor of the State of West Virginia, and moved the court to grant to it a temporary restraining order herein in accordance with the prayer of the bill.

Order Filing Answer and Motion to Dismiss—April 17, 1925

Thereupon came the defendants Birk S. Stathers, Ernest D. Lewis and James J. Divine, persons constituting The Public Service Commission of West Virginia, Howard B.

Lee, Attorney General of the State of West Virginia, and Fred M. Livezey, Counsel for said Public Service Commission of West Virginia, and tendered and asked leave to file their motion to dismiss this suit for reasons stated in said motion in writing, which leave is granted, and said motion is accordingly filed. Thereupon the said defendants tendered and asked leave to file their answer herein, which leave is granted, and said answer is accordingly filed.

ORDER GRANTING LEAVE TO INTERVENE AND FILING SEPARATE ANSWER—April 17, 1925

Thereupon came the City of Charleston, a municipal corporation, by H. D. Rummel, A. G. Stone and Donald O. Blagg, its attorneys; the City of Huntington, a municipal [fol. 206] corporation, by C. W. Strickling and Paul W. Scott, its attorneys; The Manufacturers Club of Huntington, a corporation, by George S. Wallace, its attorney; the City of Williamson, a municipal corporation, by Harry C. Sherr and Price, Smith & Spilman, its attorneys; the towns of Ripley and Ravenswood, each municipal corporations, by T. J. Sayre and F. B. Morgan, their attorneys; Dunkirk Window Glass Company, a corporation, Westvaco Chlorine Products Company, a corporation, West Virginia Brick Company, a corporation, Standard Brick & Supply Company, a corporation, Ward Engineering Works, a corporation, Kanawha Brick Company, a corporation, Kanawha Manufacturing Company, a corporation, Kanawha Ice Company, a corporation, Diamond Ice & Coal Company, a corporation, Elite Laundry Company, a corporation, Superior Laundry Company, a corporation, Charleston Laundry Company, a corporation, and Kanawha Woolen Mills Company, a corporation, by R. S. Spilman, their attorney, and asked leave to file their petition asking to become defendants to this suit, to the filing of which there is no objection, and said leave is accordingly granted and said parties are allowed to intervene in this suit and make defense to the same. And thereupon said parties, by their attorneys as aforesaid, tendered and asked leave to file their joint and separate answer to the bill of complaint herein, which leave is granted, and said answer is accordingly filed.

STIPULATION RE EVIDENCE AND EXHIBITS—Apr. 17, 1925

Thereupon the plaintiff and the defendants and the intervenors herein, by their counsel, agree that the evidence taken before the Public Service Commission herein may be introduced upon the motion for a temporary restraining order now made, to have the same effect as though the witnesses giving said testimony were personally present and testified before the court, and that any exhibits or papers or documents used by said witnesses may be offered with like effect. Thereupon the plaintiff offered, in support of its motion for a temporary restraining order, a transcript of the testimony taken before said Public Service Commission of all of the witnesses introduced upon its behalf, together with the exhibits filed with the testimony of its wit- [fol. 207] nesses, to have the effect provided by the above stipulation. And thereupon the defendants and intervenors asked that all of the testimony exhibits and reports offered on behalf of both sides upon said hearing before said Public Service Commission, be considered as introduced upon said motion; and there being no objection thereto, the said motion was fully heard upon the full transcript of all of the testimony taken before said Public Service Commission, to have the same effect as though the witnesses were present and testified before the court, as well as upon all of the exhibits filed with their testimony.

And the court not being advised of its judgment in the premises, takes time to consider thereof.

[fol. 208 & 208½] [Title omitted]

ORDER OVERRULING MOTION FOR TEMPORARY RESTRAINING ORDER—May 8, 1925

This day came the plaintiff, by its counsel, as well also the defendants, by their counsel, and the protestants, likewise by their counsel; and the court proceeding to pass upon the motion heretofore made and argued for a temporary restraining order herein, doth overrule the same and doth decline to grant said temporary restraining order.

ORDER SETTING HEARING ON MOTION FOR INTERLOCUTORY INJUNCTION AND CALLING FOR TRIAL BY THREE JUDGES—May 8, 1925

And the plaintiff having moved for an interlocutory injunction in accordance with the prayer of the bill, and all of the parties being present in court, by their counsel, it is ordered that the hearing of the motion of the plaintiff for a preliminary injunction be and it is hereby set for the 15th day of May, 1925, at ten o'clock A. M., in the United States Court Room, in the City of Charleston, West Virginia. And all of the parties who are required to have notice of said hearing being present in court or represented at this time, notice thereof is by them waived.

And I hereby call to my assistance at the hearing of said motion the Honorable John C. Rose, a Circuit Judge of this Circuit, and the Honorable Henry C. McDowell, Judge of the District Court of the United States for the Western District of Virginia.

Dated at Charleston, West Virginia, this 8th day of May, 1925.

Geo. W. McClintic, Judge of the District Court of the United States for the Southern Dist. of W. Va.

[fol. 209] IN UNITED STATES DISTRICT COURT

[Title omitted]

Statement of Evidence

Upon the hearing of this cause before the Hon. John C. Rose, one of the judges of the Circuit Court of the United States for the Fourth Circuit, the Hon. Henry C. McDowell, Judge of the District Court of the United States for the Western District of Virginia, and the Hon. George W. McClintic, Judge of the District Court of the United States for the Southern District of West Virginia, upon the plain-
[fol. 210] tiff's motion for an interlocutory injunction, it was agreed by the parties that all the evidence heard and considered by the Public Service Commission of West Virginia upon the hearing before that commission upon the order suspending the rate sought to be put in force by the plaintiff, should be considered with the same force and

effect as if the witnesses testifying before said Commission were present and testified in open court, and that all of the exhibits, papers and other evidential matter introduced before said commission upon said hearing shall likewise be considered as introduced on this hearing; and there was thereupon introduced upon this hearing a transcript of all of the evidence heard by the said Public Service Commission at the various hearings had before it, certified by the official reporters of said Public Service Commission, which it is agreed is a correct transcript of the evidence to be here considered, together with all of the exhibits, data and statements referred to in the evidence of said witnesses; and that in addition to such evidence as was had before said public Service Commission either party might introduce such evidence as it was advised might be proper upon this hearing. The evidence introduced before said Public Serv-
[fol. 211] ice Commission is in substance and effect as follows:

Charles F. Uebelacker, introduced as a witness by United Fuel Gas Company, testified in substance and effect as follows:

That he resides at Hackensack, New Jersey; that his business address is 115 Broadway, New York City; that he is a member of the engineering firm of Ford, Bacon & Davis; that he has had experience as an engineer in the operation, construction, valuation and investigation of public utility properties for about thirty-four years; that he was graduated from Princeton College with the degree of electrical engineer in 1890; that thereafter he was employed in the factory of the Brush Electric Manufacturing Company, Cleveland, until 1893, in positions from apprentice to assistant superintendent; that thereafter he was in the employ of the Consolidated Traction Company of New Jersey until 1897, in positions from armature winder to chief engineer, master mechanic, and for part of the time as division superintendent in the transportation department; that from 1897 to 1899 he was in the employ of the Peckham Motor Truck and Wheel Company, Kingston, New York, as Works Manager; that from 1899 to 1901 he was in the employ of
[fol. 212] the firm of which he is at present a member, representing that firm in the management of the Elmira Water,

Light and Railroad Company, Elmira, New York, in which position he had charge of the operation of a street railway, electric light, gas and city water supply; that from 1901 to 1912 he was chief engineer of the firm of which he is now a member, and that in 1912 he became a member of that firm; that since he became an employee of said firm he has been largely engaged in the construction, operation and examination of public utilities, and in the course of that work, beginning with 1906, he has made some thirty-six reports of natural gas companies, involving some twenty-five different companies, distributed from Pennsylvania and West Virginia on the east to California on the west, and from Louisiana on the south to Alberta, Canada, on the north—in other words, distributed over the natural gas fields of this country; that he has made investigations principally of electric light and railway properties and public utilities engaged in these industries in a majority of the larger cities of the country, a few of such examinations having been made of such industries in Pittsburgh, Pennsylvania, Philadelphia, Pennsylvania, New York, N. Y., Schenectady, N. Y., [fol. 213] Buffalo, N. Y., Nashville, Tenn., Knoxville, Tenn., Birmingham, Ala., New Orleans, La., Memphis, Tenn., Little Rock, Ark., Houston, Texas, San Francisco, Calif., Chicago, Ill., St. Louis, Mo., Providence, R. I., and others which he did not recall at the time he made out the list; that his firm usually employs from 140 to 250 assistants in carrying on its work, and that the valuation work done by that firm has amounted to several billion dollars in the last ten years.

That he has made recently a valuation of the property of the United Fuel Gas Company; and the witness then detailed the method used by him in making said valuation in the following language:

I have before me a summary of the valuation of the United Fuel Gas Company, dated December 31, 1923.

We prepared with the assistance of the company records and the assistance of information we could obtain from people who had been long in the employ of the company, and from actual count and investigation made by our own men in the field, an inventory of the physical property of the company.

In cases where we depended upon the company records and where we depended on information from employees

of the company, we, so to say, spot-checked that informa-
[fol. 214] tion, to find whether, in individual instances, what was actually found in the field corresponded with what had been submitted to us. In all, we either actually inventoried ourselves or spot-checked the information taken from the records of the company to the extent of about sixty-five per cent of the entire inventory.

We then proceeded to prepare unit prices which would be fairly representative of costs as of December 31, 1923, in this vicinity. In the preparation of these unit prices we examined the records of the company to determine the rates of wages paid by them and also the current prices actually paid by them for the materials. These latter we checked by our own records and by quotations directly from manufacturers.

We then applied these unit prices to the inventory previously prepared and this application resulted in the cost to reproduce the physical property. To this cost to reproduce the physical property we added certain overheads. These overheads may be summarized as to each of the principal divisions of the physical property, amounting in total to 21½ per cent on production system, 26 per cent on
[fol. 215] transmission system, 22 per cent on distribution system, and 22 per cent on general property. These overheads are made up of "engineering and superintendence," "administration" during construction), "interest" (during construction), "pre-construction costs," "legal expenses," "insurance and taxes" (during construction), and "cost of financing."

(The valuation made and the report thereon by the witness was filed as part of his testimony, marked Uebelacker Exhibit No. 1, and the treatment of general overheads referred to by him appears at pages 22 and 23 of the printed exhibit.)

The witness proceeded further to explain the method used in making said valuation, as follows.

In connection with "cost of financing" I would like to specifically bring out the fact, which is also mentioned in the text of this report, that the amount we have there allowed of 4 per cent does not include anything for discount on securities. It includes simply the expense of distribut-

ing the securities to the public who are the final investors. It is an expense item and not a discount item.

The details of the reasons for which we assume the per- [fol. 216] centages given in the table appearing on page 23 are fully set forth in the succeeding pages of the report.

Having thus arrived at the value of the physical plant, there was next included an allowance for working capital, as appears from said report.

We next proceeded to ascertain the value of the leaseholds and natural gas rights. In ascertaining this value the principle we followed was that given on page 26, namely:

"The measure of the value to the owner of leases of gas in the ground is the difference between the prevailing market price at which such owner or lessee can purchase gas delivered to the field mains and the cost to such owner or lessee of producing and maintaining with his own wells an equivalent supply of gas at the same point of delivery."

To assist us in preparing the table of the value of the United Fuel Gas Company's rights, we had available the report of Mr. R. E. Davis giving the computation of the volume of gas remaining in the proven and probable territory controlled by the United Fuel Gas Company and amounting to about 663,000,000,000 cubic feet of recoverable gas.

We have made ourselves familiar with the process by [fol. 217] which Mr. Davis developed this estimate and agree with his methods. In fact they are the methods which are generally considered to be the most reliable where sufficient data (as was the case with the United Fuel Gas Company) is available to develop estimates along these lines.

Our next step was to develop the prevailing market prices, and, for this purpose, we had available some six actual demonstrations (illustrations) of contracts which are not dependent upon the price at which gas is sold to the ultimate consumer.

The details of our development of these prices appear on pages 27 to 39 inclusive, and, on page 39, appears a brief table giving a summary of the illustrations which we had to guide our judgment as to the value of gas in the ground.

These six illustrations were, first, purchase of gas in

field by Owens Bottle Works, the contract price for which was 10 cents and, after deducting the cost to the United Fuel Gas Company of producing gas in its own field, left the value of the gas in the ground, based upon the owner's contract price, $0.04569 per M C. f.

The Owens Bottle Company does not buy this gas from the United Fuel Gas Company or any other company en- [fol. 218] gaged in the public utility business, and its plant is located near Charleston, West Virginia.

The International Nickel Company purchases gas in the field, or rather gas is delivered to them, at $0.20 per M c. f. which is equivalent to gas in the field at $0.17 per M c. f., and the value of the gas in the ground, based on deduction from that price of the cost to the United Fuel Gas Company of producing gas from their own fields, would be $0.11569 per M c. f.

There will be introduced, as I understand it, testimony to the effect that industries in the Pittsburgh district would pay for gas, delivered twelve months out of the year, at least $0.30 per M c. f., and, bringing that price back to the field price by deducting the cost of transmission, production, and the return on investment, on the necessary plant to handle that gas to Pittsburgh, results in a value of gas in the ground of $0.07188 per M c. f.

Large quantities of industrial gas, as I am informed, are sold in Pittsburgh at a price of at least 30 cents, and I am also informed that considerable quantities are sold, and have been for a number of years, at that point at considerably more than thirty cents, and I think, con- [fol. 219] sidering the fact that the contracts now made for industrial gas in Pittsburgh involve the right of the supplying company to shut off the supply during cold weather when the total available supply may be required for domestic customers, would indicate that the price of thirty cents quoted is probably low. My statement was that I understood that further testimony would be introduced to the effect that thirty cents, I should have said that thirty cents or more, was the price at which all gas developed from the fields of the United Fuel Gas Company could be disposed of in Pittsburgh.

My calculation is based on a rate of thirty cents at Pittsburgh, which I would consider as a decided minimum.

The normal price quoted in the field by the South Penn Oil Company, for purchased gas, is $0.08, which figure I have used in this statement. However, I understand that they have recently entered into one or more contracts at $0.12 per M. c. f. Based on a rate of $0.08, the value of gas in the ground would be $0.2569 per M c. f.

The United Fuel Gas Company delivers at Cedarville to the Hope Company and to the Philadelphia Company at an average price to the Hope Company of $0.2266. The price under that contract varies with the volume delivered [fol. 220] per day, but the average over the year was $0.2266 per M c. f., and results after deducting cost of production and delivery to Cedarville, in a field price of $0.05108 per M c. f. as the value of the gas in the ground.

The United Fuel Gas Company has recently entered into a contract with the Falling Rock Cannel Coal Company for the purchase of gas from which the gasoline has been extracted, and, incidentally, in this connection, I should mention that this contract permits the Falling Rock Company to deliver gas as they produce it. In other words, in uniform quantities each month, and I noticed in looking over their record of deliveries that they actually had delivered greater volumes monthly in the summer than they had in the winter when the United Fuel Gas Company has the greatest requirements. In other words, this gas is not delivered to the United Fuel Gas Company in accordance with the requirements of the United Fuel Gas Company but in accordance with the convenience of the vendor. This price is at the rate of $0.085 per M c. f. at the well and would result in a value of gas in the ground of $0.03089 per M c. f.

In view of all these illustrations, my judgment is that the value of gas in the ground is not less than $0.05 per M c. f., which figure we have applied to the reserve calculated by [fol. 221] Mr. Davis and thus arrived at the value of the practically known gas reserves of the United Fuel Gas Company.

There remains, then, the value of the untested acreage of the United Fuel Gas Company. That we have shown at the average cost in 1923 of acquiring the untested acreage, which was approximately $5.00. The figure appears on page 40 and is $5.26 per acre, the average cost of acquiring untested acreage in 1923.

The summary of this calculation for the value of the gas reserves appears on page 40 and is the estimated value of proven and probably productive acreage, based upon Mr. Davis' determination of the volume of recoverable gas in the proven and probably productive acreage at five cents per thousand—$33,155,422.00, and the estimated value of the unproven acreage, based on the cost per acre actually found in 1923 of $5.96 per acre of unproven acreage—$3,293,754.00; making the total estimated value of the leaseholds and natural gas rights—$36,449,176.00.

On the succeeding pages of the report appear, first, a summary of valuation of the entire property of the United Fuel Gas Company; secondly, a division of this summary by geographical location in the States of West Virginia, [fol. 222] Kentucky and Ohio; and, thirdly, a segregation of the valuation in accordance with the Standard System of Accounts prescribed by this Commission for natural gas companies.

There is also, on page 42 of the report, a brief resume of the principal unit prices as of December 31, 1923, used in pricing the inventory. And, at the end of the report, a small-scale map showing the location of the transmission lines, pumping stations, and distribution systems owned by this company.

In addition to the summary from which I have just been quoting, there are five volumes giving in detail the items in the inventory and the price applied to each item, from which details the summary statements which I have just been describing were collected.

That the summary about which he has been speaking shows two values, to wit, the cost to reproduce the property as of December 31, 1923, and the cost to reproduce it at said time less observed deterioration; that at the time the inventory was made an inspection of the property for condition was also made, and the observed condition of the property resulting from that inspection is reflected in the value entitled "Cost to reproduce less observed deteriora- [fol. 223] tion;" that the report does not indicate the time at which the various items of property were installed; that no attempt was made to apply the straight line method of depreciation; that to a certain extent the report made up by the witness as "Study of the Historical Value of the

Property'' does indicate the date of the installation of the various items thereof, but that element does not appear in the ''cost to reproduce;'' that in determining this he merely observed the property itself and its present condition, and that the calculations contained in the report are based upon the cost to actually reproduce the property as indicated above, and the other valuation upon the cost to reproduce it less the deterioration observed from its use; that the general overheads heretofore referred to by the witness were applied to the physical properties only, and not to the gas reserves, no value being added to the value of the gas reserves on account of any intangible items; that the total value of the property of United Fuel Gas Company, as ascertained by the witness and as shown by said report, is $74,493,601.00, cost to reproduce, and $66,070,496.00, cost to reproduce less deterioration, both being based on prices current December 21, 1923, and on property in existence at [fol. 224] that date, and this includes all property of the company in the states of West Virginia, Kentucky and Ohio, and that in the report this property is divided geographically among these several states; that the property indicated as being in West Virginia is simply the property geographically located in that state, and does not indicate that all of it is used in the public service in West Virginia; that the witness has assigned a proper proportion of the property to the public service in West Virginia, and will refer to it later in his testimony; that all of the property the valution of which has been spoken of is property used or useful in the natural gas business of the company, except as some portion of the same may incidentally serve the gasoline business, and that to that extent the witness has given it weight; that the values given by the witness for the company's natural gas reserves do not include any value on account of any gasoline content which may be contained in the natural gas or any property or equipment owned by the Virginian Gasoline and Oil Company used for the recovery of gasoline from the gas, except that the transmission system does transmit a certain proportion of the gas from which eventually the gasoline is extracted; that the value of the gas reserves is determined from the [fol. 225] volume of the gas sold from which the gasoline has already been extracted, and consequently does not in-

clude any value for gasoline content of the gas reserves, and no portion of the gasoline plant is included in this valuation.

That in the instances referred to by the witness and used by him in ascertaining the value of five cents for natural gas in the ground, he is informed that the price paid by the Owens Bottle Company, referred to by him, is for gas from which the gasoline has been extracted, or at any rate that the producer has the right to extract the gasoline, although he may not do it in all cases; that in the case of the International Nickel Company referred to by the witness the gasoline is not actually extracted, but the producer has the right to extract the same, and is, as witness understands, contemplating erecting a plant for that purpose, and that the extraction of this gasoline will not change the contract price; that the delivery at Pittsburgh is for gas from which the gasoline has been extracted; that the purchase price in the field for the South Penn Oil Company is the same for all gas, whether the gasoline has been extracted or not, no distinction being made in the price; that the gas delivered at Cedarville by the United Fuel Gas [fol. 226] Company to the Hope Natural Gas Company and Pittsburgh and West Virginia Gas Company is all dry gas, from which the gasoline has been extracted; that the price paid by the United Fuel Gas Company to the Falling Rock Company is specifically for dry gas, from which the gasoline has been extracted before delivery. In every one of the instances referred to by the witness prices are for dry gas, from which the gasoline has been extracted, or from which the vendor has the right to extract the gasoline if he so wishes; that the value of the gas reserves as fixed by the witness would be increased if the same were valued on the basis of including the value of the gasoline content to the extent of whatever that value might be; that the same has been entirely disregarded in his conclusions; that the unit price which he has applied to the volume of the gas reserves is a price which takes into account only delivery of dry gas—that is, gas from which the gasoline has been extracted.

In referring to the purpose for which the valuations of other properties were made, heretofore referred to by the witness, and the experience he has had in such work, the wit-

ness stated as follows: They were made for various purposes; in some instances to arrive at a basis for the consolidation and improvement of properties; in some instances to advise our clients as to the desirability of the purchase of [fol. 227] certain properties, and, in perhaps more than any other instances, these investigations were made for the purpose of determining what was a fair rate for our clients to ask.

I might say, incidentally, that having been in the public utility business practically all of my active life, ever since leaving the Brush Works in 1893 (my experience in the public utility business began before State Commission regulation had been considered at all), consequently, being in that line of work, I have been naturally interested in the development of state regulation from the time of its inception.

That the books of the ordinary company do not ordinarily disclose what are generally and almost universally allowed as overhead costs or charges, and more particularly is this true of those properties that were started, say prior to 1905 and 1907. Since that time there has been more attention paid to seeing that the books did reflect all of the expenses in such detail that they could be identified. Prior to that there were a great many expenses that never appeared on the books of the company and that could not be identified; that he does not know whether the books of the United [fol. 228] Fuel Gas Company disclose fully these overhead costs or charges; that the witness has had actual experience in numerous instances as to what, in a given enterprise, these overhead charges actually amount to; that perhaps the most illustrative instance, as throwing light on the present situation, would be the construction last summer (the witness testifying in May 1924) of a new natural gas transportation and distribution system in northern Alberta, Canada. In that case the witness made from the records the actual expenditures, so far as the same could be determined, of the amounts actually expended for overheads similar to those submitted in his report in this case. The work was carried on during the summer and fall and was completed in November or December. It did not include, however, certain pre-construction expenditures, such as the expense of promotion and so on, which was never set down, or at

any rate, which did not appear on the company's books. That the figures used by the witness were taken from the books of the Canadian company, the construction being under the charge of witness' firm, and monthly reports of expenditures being submitted to its office, and the man who had charge of keeping track of these expenditures returned to our office at the time the assemblage of figures [fol. 229] was made; that the figures given by the witness were worked up by the records that had been sent in monthly and the records of construction cost brought on; that the records from which the figures were made up are now in the witness' office at 115 Broadway; that the construction was done under the witness' supervision and the reports were sent to him for his consideration; that the plant construction at Alberta was much smaller than that of the United Fuel Gas Company, being intended to supply about 60,000 people, with estimated daily maximum requirements of 16 million cubic feet; that the overhead charges on the construction of the plant in northern Canada to which he has referred were as follows:

Engineering	5 16%
Administration	4 28%
Interest	4 26%
Pre-construction expenditures	3 14%
Taxes and insurance during construction	39%
Legal expenses	1 48%
Cost of money	4 06%

a total of 22.72 per cent of the construction cost exclusive [fol. 230] of the overhead; that in the construction of the plant of United Fuel Gas Company similar work and studies would have to be gone through with that were gone through with in the Alberta plant, and the figures given above by the witness do not include certain pre-construction expenses of which no record was made in the erection of that plant; that the record of overheads on this single enterprise is supported by the witness' experience on other construction work of like kind done under the witness' supervision, three analyses of which have been made. In case A the total overheads comparable with those of recent construction which were determined by the witness were 22.68 per cent, as compared with 22.77 per

cent in the Canada case; in case B they were 20.99 per cent, and in case C, which was the case of United Fuel Gas Company, which was also set up prior to analyzing the Edmonton case as to the establishment of the overheads, they were ascertained to be 23.5 per cent. That these illustrations were the result of previous experience in actual construction and in ascertaining the values before preparing the check figures from the recent experience in Canada hove referred to; in other words, that the judgment of the witness based on recent experience was practically borne out by actual results in the construction in Canada referred to; that the figures given by the witness repre- [fol. 231] sent his best judgment as to the minimum of these overhead charges; that they might be exceeded somewhat; that if he was preparing an estimate as a basis for future construction and was fixing these items of overheads as to his best judgment as to the desirability of such construction, he would probably consider the overheads at 30 per cent instead of 22 or 23 per cent, as he would certainly consider that he would have a greater expenditure than is indicated by 22 per cent.

The witness, being asked to give his opinion as to the "going concern value" of the property and as to what amount should be added to his figures on that account made the following answer:

I have not given in the detailed valuation an estimate of the going concern value for the reason that I know of no arithmetical formula which can be reduced to dollars and cents and represent going concern value. It varies with every property you come across. In any non-regulated property it can be arrived at through net earnings, but, of course, that is not permissible in valuing a regulated property. I have had prepared for a previous case a list of a large number of commission and court decisions on the question of going concern value, and the average of the [fol. 232] commission cases, in the tabulation, was about 11 per cent of the physical plant value, and, in the court cases, about 12 per cent of the physical plant value, which, applied to this property, and excluding from the physical plant value, of course, the value of the gas rights, would represent somewhere between three and three and a half million dollars as going concern value.

As I regard going concern value it includes those elements of improvement after original construction, training of the organization—that is, the improvement in plant after original construction—experience of the organization in the handling of the plant; the added fact of the connected load, as compared to the bare enterprise without customers, and the increment in value which resulted from good judgment in the original or earlier business transactions—judgment, that is, as distinguished from good will, which is not inherent in any regulated enterprise. In other words, my distinction between good will and going concern value is that going concern value is constituted of those elements which tend to reduce the cost of production, whereas good will, which is permissible in any regulated enterprise, is constituted of those elements which go to increase gross earnings, such as fair business treatment [fol. 233] of customers, prompt deliveries and things of that kind, and we are discussing now solely going concern value and not good will.

I might illustrate some of the elements that may enter into going concern value in the case of the United Fuel Gas Company. In the first place, as to the plant, its transmission lines. The original location of the transmission lines is not always satisfactory, due to the fact that it may be on a hillside, or slope, or where river crossings are found to be dangerous and alterations in location have to be made, to prevent future trouble. That can only be found out after experience with the original location. The experience which has been gained and results in a safer location of that kind is certainly an element of going value.

In the inspection which I made a few days ago of some of the compressing stations I found two illustrations—minor illustrations at that—of alterations which had been made in compressors as the result of experience. In one case certain alterations had been made in the design of the power cylinder rods which has resulted in the rods so altered now giving three years' service, when prior to that the rods as originally designed and furnished with the original compressors had gone out of service in a year or a [fol. 234] year and a half. There is a decided step in advance in improvement of plant.

Another illustration was a case where the original design had resulted in an air pocket immediately around the ex-

haust valve seats so that the cooling water could not come in direct contact with the exterior of those seats, the natural result being that a very rapid burning of the valve seats took place. A slight alteration in the design eliminated this air pocket and that trouble no longer exists.

Instances of that kind could be quoted almost without end where experience with the operation of the physical plant has resulted in improvements which tend to reduce maintenance and also increase the reliability of operation.

The company has quite a number of contracts entered into several years ago for the purchase of gas at very much lower rates than gas can be purchased in the field today. The difference in the cost of natural gas purchased under these low rate contracts and the present cost of gas current in the field, capitalized, would also be an element of going value.

The company is very fortunate in having an unusually [fol. 235] consolidated holding in uniformly productive territory, with the result that its record of dry holes is only about 10 per cent. of the total wells drilled, whereas an average of 25 per cent., I find, is not unusual in regard to this drilling. Now that would represent an average difference in the cost of a productive well of about $1,200.00. That is, if you distribute over productive wells the cost of dry holes. There are about two thousand locations in the gas territory, proven and probable, still to be drilled. If the company saves, through the reduction in the number of dry holes, on account of this uncommonly uniform territory, an amount of $1,200.00 a well, on two thousand wells, it is a mater of $2,400,000.00. Not that we claim that that is an actual value, but the good judgment which was used in selecting the territory which the company controls certainly has a value.

In other words, if you sum up these and similar elements which I say would come under going concern value of the property of the company, you would get a much larger value than the three or three and a half million dollars which I mentioned as being the result of applying the average percentage (which has been used under the commission decisions) to the physical plant of this property.

[fol. 236] That from the foregoing the witness concludes that there is an element of going concern value in connec-

tion with the property of the United Fuel Gas Company of from three to three and a half million dollars; that there is no formula for estimating the value in dollars and cents except summing up instances showing the extent to which the company saves in its expenses owing to experience and good judgment—going concern.

That altogether the witness's firm has had employed some thirty individuals on the work of making the valuation of the property of the United Fuel Gas Company; that the aggregate time, exclusive of stenographers and comptometer operators, was about 868 man days, exclusive of the witness's own time, of which he kept no particular record, but of which he employed from three weeks to one month; that the entire report as to valuation relates to December 31, 1923; that the witness has observed the property since that time and does not think that there is any material change from December 31, 1923, to the time of this testimony in May 1924, except that there was certain construction going on in a fairly advanced stage at the time he was testifying which would have to be added; that there [fol. 237] had been no material change in the unit prices used by him except that prices had gone slightly higher after December 31, but that there was a slightly downward trend at the time of his testimony, but that there was no material change from December 31, and that the valuation made as of December 31, 1923, would be substantially correct at the time the witness was testifying in May 1924.

(There was then offered in evidence the valuation of United Fuel Gas Company, Incorporated, as of December 31, 1923, marked Uebelacker Exhibit No. 1, and which is attached hereto, so marked. There was also offered, accompanying said exhibit, five volumes referred to in the evidence of the witness, being an inventory of the property of the company item by item, with the valuation of each item, all of which were admitted in evidence; but inasmuch as the engineer experts of the defendants have made a like inventory of said property and have checked the inventory made by this witness and have found it exact in all particulars and correct, both as to the items of property and the prices affixed thereto, as of December 31, 1923, as appears

from the evidence of W. J. Hagenah hereinafter contained, it is deemed unnecessary to include in this record the detailed inventories of the property, there being no disagree-
[fol. 238] ment between the expert witnesses of the parties as to the reproduction cost thereof as of the 31st day of December 1923.)

That in addition to the inventories and valuations made up above referred to, the witness compiled a report entitled "Estimated Historical Cost," and files the same as part of his testimony marked Uebelacker Exhibit No. 3 (and the same is hereto attached, so marked.)

In explanation of said report the witness testified that this estimated historical cost takes the inventory which he prepared for the cost of reproduction, shows what portion of that inventoried apparatus was in existence prior to December 31, 1915, prices that portion of the now existing apparatus that was in existence prior to December 31, 1915, at the average prices ruling in this vicinity between 1906 and 1915—in other words, at the ten year average prewar prices—and prices those items in the inventory which were installed since December 31, 1915, at the book cost of their purchase and installation, to which the overheads have been added similar to those described before in connection with the reproduction cost, the book values not reflecting any considerable part of such overheads.
[fol. 239] The value of the leaseholds in this estimated historical value has been taken at the amount at which the leaseholds and natural gas rights now stand on the company's books instead of at the estimated value of gas in the ground. This estimated historical cost shows a total of $32,813,708.00, representing the estimated historical cost of the entire property in West Virginia, Kentucky and Ohio, exclusive of any gasoline value, and in the report it is divided geographically among the several states in which it is located, which is simply the valuation of that part of the plant and found in each of the several states. The witness used the same amount of working capital in making this report that is used in the reproduction cost report, but there is not included therein any amount for going concern value, nor is there any such amount included in any of the witness's reports.

That he has made up a statement showing the unit prices used by him and the method of deriving those unit prices,

which gives the derivation of the unit prices used in making the inventory as of December 31, 1923, derived from the records of the company, and other general details. In making up this statement the witness did not go through each individual plant and show the unit price for that plant, [fol. 240] which information is given in the detailed inventories, but simply determined the unit prices in detail for a typical plant, giving the unit prices for the items entering into the wells, compressing stations, the different sizes of pipe laid in transmission lines, and so on.

(The witness thereupon filed said statement as part of his evidence, marked Uebelacker Exhibit No. 4; but inasmuch as these unit prices as determined by the witness, after the same were checked by the engineer expert employed by the defendants, were found to be correct in all particulars, as appears from the evidence of the witness W. J. Hagenah contained hereinafter, and there is no controversy as to the correctness thereof, it is deemed unnecessary to insert the said report in this record.)

That the witness has made up several statements based upon the actual expenses and actual revenues adjusted to meet various theories which may or may not be adopted. The first of these consists of the cost and return on investment and resulting rates, and is marked Uebelacker Exhibit No. 5, entitled "United Fuel Gas Company, Incorporated, West Virginia Distribution, Analyses of Expenses and Return on Investment per M c. f. and in total expenses and sales, year 1923; Actual Valuation Basis, Estimated Cost of Reproduction New less Observed De- [fol. 241] terioration," which is filed as part of the testimony of the witness, marked as above indicated, and is attached hereto.

In explanation of this exhibit the witness stated:

The purpose of this study is to develop the average price for gas sold in West Virginia, which would result from adding together that proportion of the gas production and transmission expense which is assignable to the sales of gas in West Virginia, that proportion of the depreciation on the gas plant, the amortization of the Company's gas holdings and plant and depletion of its value which are assignable to the sales of gas in West Virginia, and the

return on the investment assignable to the sales in West Virginia, together with the actual distribution expenses, return on investment, depreciation and amortization on the distribution plants actually geographically located in West Virginia.

The detail of the method which has been adopted is, beginning with production, to determine the cost per thousand of producing gas, including the amortization of the leasehold values, the actual operating expense, depletion on investment in wells, the depreciation of physical plant, other than wells, in the production system, and return on investment at 8 per cent and at 10 per cent, there being two [fol. 242] separate calculations for the two different rates, and to make this determination on the basis of the cost to reproduce new as of December 31, 1923, and the cost to reproduce as of December 31, 1923, less observed deterioration, these being two separate calculations.

To this cost per thousand of production, which is the average cost of producing of the net production by the company, has been added the average cost, including the same items, of transmission; the sum of the two being the cost, including the return on investment, to the company of delivering gas at what might be called the city gate; in other words, at distribution centers in West Virginia on boundaries of West Virginia, of all gas sold.

There are two exceptions to be noted; first, that in arriving at the volume of gas production, used as a divisor for the entire cost of production, the gas sold in the field has been included; on the other hand, in arriving at the divisor, that is, the number of thousands of feet of gas handled by the transmission system, gas purchased has been added to the net gas produced (after deducting field sales from total production), so that the cost per thousand transmitted is the result of dividing the total expense by the sum of the net gas produced by the company and the gas purchased in [fol. 243] the field. To the city gate rate thus arrived at has been added the cost per thousand for actual distribution expense, amortization, depreciation on the actual reproduction cost of the distribution plants located in the state of West Virginia; the sum total making the average rate for industrial and domestic gas which the company would have to charge in order to earn an 8 per cent, or a

10 per cent. return on its value, either new or less deterioration.

That there is also appended to the statement, arrived at by a similar process, a statement showing the return on investment that results from the application of existing rates; that for the purpose of this calculation the witness has assigned a certain part of the United Fuel Gas Company's property to the business under investigation—that is, that part devoted to the service of gas to consumers in the state of West Virginia; that in making this assignment the production values were divided upon the basis of the ratio of gas sold in West Virginia to the total gas sold; that there is included in this item of production value the value of the leaseholds and gas rights, the depleted value of the producing wells, and the value of the other productive structures, up to the transmission lines; that in the [fol. 244] cost to reproduce new it has been considered that the value of the drilling costs and equipment costs of wells is only that portion of the original cost which is represented by the remaining recoverable gas to be obtained from them—that is, there has been actually included as the new value of the well costs only about 46 per cent. of the reproduction cost of these wells, as it cannot be considered that they have a value in excess of their ability to produce gas, and they are 54 per cent. exhausted. Of this production system thus ascertained there has been assigned to the West Virginia public service in this calculation a part bearing the same proportion to the whole of the production system as the quantity of gas sold in the public service in West Virginia in 1923 bears to the total gas sold by the company, without giving any consideration to the fact that the public service business has the first call upon the system.

In determining the part of the transmission system assignable to the public service in West Virginia there have been first eliminated those lines which carry gas entirely outside of the state. There is one line which carries gas partly in the state and partly outside the state, which has been included in the general transmission system because it is inseparable therefrom, and although part [fol. 245] of the line is located in Kentucky, its function is to deliver gas in West Virginia. After eliminating from the cost to reproduce the transmission system

those lines which function entirely outside of the State of West Virginia, the expense and what is termed the "investment responsibility" of the remaining transmission system has been divided by the total gas handled by the company. The result thus obtained was what might be termed a city gate rate, which was applicable to gas distributed in the State of West Virginia and to gas sold at the state line to companies outside of the state. To the city gate rate has been added the actual expense and investment responsibility for the distribution systems in the state of West Virginia, and this has been divided by the volume of gas sold in West Virginia for consumption therein. In this manner the total value of the property attributable to the public service in West Virginia is, on the basis of reproduction new, $17,702,672.00, and on the basis of reproduction new less observed deterioration, $16,477,205.00, as will appear from Uebelacker Exhibit No. 5 filed as aforesaid; that the witness regards the method used by him as a fair distribution of the expense and as near as can be ascertained a correct method; that in making this distribution no ac-
[fol. 246] count or credit was taken, or charge made, against the West Virginia public service consumers for the preference given them in the utilization of the property, but that if such preferential service is given them then they should be charged additionally therefor.

That in making up this statement the witness has used the terms "depreciation" as to certain parts of the property, "depletion" as to certain other parts, and "amortization" as to certain other parts; and in explanation of these terms the witness says:

I will take up the term "depletion" first and in the beginning will say that is used only as a term in order to distinguish between certain conditions which are independent of each other, which do not rise and fall in unison.

The term "depletion" as used here, we will say, applies to the retirement of the cost of well drilling equipment, less salvage, and plus the cost of recovery of such portion of the well equipment as can be recovered, the cost of plugging wells, and other incidental expenses of abandonment.

[fol. 247] The term "amortization" applies to an allowance for the eventual retirement of the present value of

gas reserves and the present value of operating plant in West Virginia upon the exhaustion of the supply of natural gas which is essential for its operation.

The term "depreciation," as used herein, and in the amount which has been assigned to it, means simply an allowance for the equalizing of the annual expenditures for keeping the plant in condition to perform 100 per cent service; and accruals to a depreciation fund calculated in this way are in no sense intended for the retirement of the value of the investment. They are simply an equalization of the annual expenditures for maintenance and replacements, and any fund accruing under the allowance which we have made would accrue perhaps for two or three years and then, as any heavy expenditures for maintenance were made by the company, become entirely exhausted, and then might accrue for two or three years, and, on the re-occurrence of a period of heavy expenditures for maintenance, again be entirely exhausted. It is in no sense for the purpose of returning to the owners of the property the value of the property used in the service at the termination of such use.

That the term "plant" used by the witness in connection [fol. 248] with the term "amortization" means the actual physical plant which is utilized in the production, transmission and distribution of the gas, and also applies to the value of the gas reserve, which is exhausted as the gas is distributed; that the term "depletion" applies to the gas wells and not the term "amortization," as the same is used by the witness; that the term "depletion" takes care of the drilling and material costs of the wells, and cost of abandoning the wells, deducting therefrom the salvage from the abandoned wells; that the term "depreciation" is to take care of such incidental renewals as are necessary to keep the plant up to 100 per cent, the term "amortization" being used to take care of the physical plant. In illustration, the witness stated that to re-rubber a line the charge would be to depreciation reserve, but if the line was abandoned because the gas in the territory was exhausted the cost of the abandoned line would be charged to amortization reserve; that the term "depreciation" is a device for equalizing maintenance charges.

That the property valued by him and about which he has been testifying, while owned by three companies, is really

one company; that the property valued by him is the prop-
[fol. 249] erty of the United Fuel Gas Company, the Warfield Natural Gas Company and the Cabin Creek Gas Company; that all the stock of the Warfield Natural Gas Company is owned by the United Fuel Gas Company, and that the same is true as to the Cabin Creek Gas Company—at least, the witness assumed this in making his valuations—and that the properties of all these companies are operated as a single unit and are treated as a single unit, and in the statements of expenses, revenues, and rates of return made up by the witness he has included the properties of all three companies and treated them as a single unit.

Referring to Exhibit No. 5, to the statement contained on the last two pages thereof, this statement shows the net earnings resulting from the existing rates, without including in the expense any return on investment, based on the revenues and expenses for the year 1923, and on the estimated cost of reproduction new as of December 31, 1923, also on the reproduction cost as of that date less observed deterioration, and refers entirely to gas and to the property and revenues and expenses applying to the gas sold for consumption in West Virginia. It shows the net earnings in dollars and cents were a minus of $253,649.00—that [fol. 250] is, after allowing depreciation on the basis which witness explained, and amortization, in addition to the actual operating expenses and taxes, exclusive of 12½ per cent income tax. The rate of return on the basis of reproduction new is a minus of 1.433 per cent, and on the basis of reproduction new less observed deterioration a minus of 1.539 per cent; and by minus is meant a per cent of loss on investment—that is $253,649.00 is loss on investment applicable to gas sold in West Virginia, and not a gain. In arriving at this conclusion the total amount allowed for depreciation is about $[illegible] annually, and this is about 4 per cent on the actual depreciable property.

The witness then offered in evidence, along with Exhibit Uebelacker No. 5 above filed, Uebelacker Exhibits 5a, 6, 6a, 7, 7a, 8 and 8a. Exhibit Uebelacker No. 5, above referred to, and which has already been filed, gives the average rate per thousand for all domestic and industrial gas sold in the state of West Virginia that would result from including in the expenses of producing, transporting and distributing gas a return of 8 per cent and a return of 10 per

cent on the value of the property devoted to that purpose. Exhibit Uebelacker No. 5a gives a determination on a simi- [fol. 251] lar basis of the rate at which domestic gas should be sold and the rate at which industrial gas should be sold, taking into consideration the relative responsibility for the investment in plant required to serve each class of consumer; and said Exhibit Uebelacker No. 5a is attached hereto and made a part hereof. Exhibits Nos. 5 and 5a are based on taking the expenses as shown in the company's books. Exhibits Nos. 6 and 6a are the same as Nos. 5 and 5a except that in Nos. 6 and 6a an allowance in the expenses and investment is made by deducting from the production and transmission expense and investment responsibility 3 per cent on account of the gas consumed in the extraction of gasoline. The same distinction exists between 6 and 6a, namely, that 6 shows the cost at the average price of domestic and industrial gas, and 6a gives the domestic price resulting from its expense and investment responsibility and the industrial price resulting from its expense and investment responsibility separately. The said Uebelacker Exhibit No. 6 shows a loss of $219,669.00 instead of a loss of $253,649.00 as shown by Exhibit No. 5, and a corresponding decrease in the loss of rate per cent. Exhibit No. 6a shows a corresponding change from 5a.

(The said Exhibits 6 and 6a were filed by the witness as [fol. 252] part of his testimony, and are attached hereto as part hereof.)

Exhibits Uebelacker No. 7 and No. 7a show the average price, and, separately, domestic and industrial prices, based on the 1923 expense and investment, after making a suitable correction in the gross receipts to allow for the effect of the increased rate as specified in the schedule already filed by the company, on the consumption of gas by domestic consumers. It is well established that any increase in rate results, in the course of perhaps not the first season, before the people realize the effect, but eventually in a decreased domestic consumption, which bears a certain fairly defined relation to the rate asked; and this decrease in the amount of gas consumed domestically should the increased rate be put into effect is reflected in these exhibits 7 and 7a, and the same are attached hereto and made part hereof.

Exhibits Uebelacker No. 8 and Uebelacker No. 8a show the effect on the income of making the above corrections previously considered, first, the allowance for the responsibility of the gasoline production for a certain amount of the production and transmission expense and investment, and, secondly, the effect of the increase in the domestic [fol. 253] rates asked for in the schedule already filed by the company on the consumption of gas by domestic consumers, Exhibit No. 8 giving the average effect on industrial plus domestic, and No. 8a giving the effect in detail on domestic and industrial prices.

(Exhibits 8 and 8a were filed by the witness as part of his testimony, and are attached hereto as part hereof.)

All of these statements, Uebelacker Nos. 5 to 8a, inclusive, are calculated in the same manner as was explained for Exhibit Uebelacker No. 5.

Referring to Uebelacker Exhibit 5a, which is a consideration of the 1923 business allocating to the domestic and industrial business their respective responsibility on the basis of maximum demand, the effect as to the resulting rate is, that on the basis of an 8 per cent return on the reproduction new value of the property a domestic rate of 47.8 cents and an industrial rate of 21.9 cents; on the basis of 8 per cent return less observed deterioration, a domestic rate of 46.44 and industrial rate of 21.50 cents; on the basis of a 10 per cent return on the cost of reproduction new, a domestic rate of 52.53 cents, and an industrial rate of 23.56 cents; on the basis of a 10 per cent return on the cost of reproduc- [fol. 254] tion new less observed deterioration, a domestic rate of 50.83 cents, and an industrial rate of 23.07 cents; per cent return on existing rate, on the basis of reproduction new, domestic 3.115 per cent (minus), industrial a plus of 4.404 per cent; on the basis of reproduction new less observed deterioration, domestic a minus of 3.36 per cent, industrial a plus of 4.68 per cent.

The witness testified in regard to the higher rate required for domestic service than for industrial service as follows:

At times of severe cold weather, the domestic service requires at least three quarters of the capacity of the plant. On the other hand, the annual sales to domestic customers Virginia; so that the investment responsibility and large

are about half of the total sales to customers in West proportion of expense, which is fixed, three quarters of those are incurred on account of domestic sales and only one quarter are incurred on account of industrial sales; whereas, on the other hand, domestic sales and industrial sales in this particular year are nearly the same. So, when you use as a divisor half of the gas sold with one quarter of certain of the expenses and investment responsibility, the resulting cost per thousand is very much lower [fol. 255] than when you use as a divisor one half of the gas as against three quarters of certain fixed expense and investment responsibility.

That this statement is made specifically with reference to the plant of the United Fuel Gas Company and is derived from information obtained from its records, and is contained in Exhibit Uebelacker 5a above referred to; that the Exhibit 5a represents his best judgment as to how this investment and expense should be allocated as between the domestic and industrial consumers connected with the particular plant involved. Exhibits Uebelacker No. 6 and 6a are explained by the witness as follows.

In Exhibits Nos. 6 and 6a we have determined by the same method as employed in Nos. 5 and 5a the average price for gas and the price for domestic consumers and industrial consumers separately after making a deduction from the investment in production, plant, and expenses, and the investment in transmission plant and expenses, of three per cent to represent the use made of production plant (as distinct from the value of gas reserves) and transmission plant, for the production and transmission of that portion of the gas which is removed in the extraction of gasoline. [fol. 256] Otherwise the statements are along the same lines as 5 and 5a.

That the 3 per cent. deduction on account of gasoline referred to by the witness was not applied to that portion of the transmission plant which is beyond the last gasoline extraction plant and consequently handles only dry gas; that it was applied to all parts of the transportation system through which gas containing gasoline was transported, and that the reason for using the 3 per cent. for this purpose was that the extraction of one gallon of gasoline per thousand cubic feet, varying according to circum-

stances, will reduce the volume somewhere between 31 and 45 cubic feet on the thousand; and in the case of United Fuel Gas Company it is assumed that there is one gallon of gasoline per thousand cubic feet, and in the judgment of the witness 3 per cent. would represent the maximum of shrinkage in gas of this particular company resulting from the extraction of gasoline. Further, attention should be drawn to the fact that the volume of recoverable gas in the reserves does not include as a part of that reserve this shrinkage of 3 per cent. in the gas resulting from the extraction of gasoline; that is to say, if the gasoline content contained in the reserves were included, the calcula- [fol. 257] tion would be at least 2 per cent. more than that used by the witness as found by Mr. Davis. The theory upon which this 3 per cent. is used in dividing the expenditure incurred between the production of gasoline and the production and transportation of gas for sale to the public, is upon the basis of the use made for the two purposes of the property. If the 3 per cent. which is considered as disappearing in the production of gasoline were not produced at all it would not decrease in any way either the production or transmission expense or investment. It is such a small amount that it is, you might say, within the limit of error in metering. The ordinary allowance for error in meters is about the same, in some states 2 per cent. and in other states 3 per cent., plus or minus. This volume is so small that you could not really meter it and say you had the exact amount.

The extraction of the gasoline makes the gas more suitable for transmission, in that it eliminates that portion of the gas which might be left in the transmission lines and both hold up transmission and attack the rubbers in the joints, and also slightly reduces the heating value of the gas something under 2 per cent., as I recall it. My recollection of the figure is that by the extraction of the gasoline the B. T. U's are reduced about 17 per thousand cubic [fol. 258] feet, which would be in the neighborhood of 1.7 per cent, and this would not have any practical effect upon the quality of the gas. That prior to the introduction of the treatment of the gas for removal of the gasoline there was considerable trouble experienced by the collection of liquid in the lines at the low points, and there was also

considerable trouble experienced on account of the eating out of the rubbers in the joints due to this excess of liquid, and there was also a very considerable loss of the gas produced because the drips had to be blown frequently. As to just the per cent. of that loss of gas no statement could be made, but the frequent blowing of the drips in cold weather resulted in a very considerable loss of gas. The net result of the application of 3 per cent. for the extraction of gasoline, as applied to Exhibits 6 and 6a, is that on the basis of reproduction cost new and 8 per cent. return in the average price between domestic and industrial, is the difference between 36.1 cents and 35.7 cents, or about 4 cents per thousand, and that is what Exhibit No. 6 is designed to show. Exhibit 6a shows the same thing, and in addition allocates the net result as between domestic and industrial consumers, which shows that for domestic [fol. 259] consumers, on the basis of reproduction new and 8 per cent. return, the difference is that between 47.8 cents and 47.2 cents, or a difference of .6 of 1 cent, and, similarly, on industrial the difference is that between 21.9 and 21.6, or a difference of .3 of 1 cent per thousand cubic feet. This difference is also carried out in the rate of return in exhibits 6 and 6a.

Exhibits Nos. 7 and 7a take into account in the gross statement of income the probable decrease in domestic consumption resulting from increasing the rate over the rate at present in force to that requested by the company in its recently filed schedule, so far as domestic consumption is concerned—that is, an increase in the domestic rate from about 21 cents to about 38 cents. Otherwise the exhibits are the same. The net result of these calculations, comparing exhibit No. 5, based on an 8 per cent. return and reproduction new, with exhibit No. 7, shows a price of 39.4 cents as compared to 36.1 cents in exhibit No. 5, of an increase of 2.94 cents. Exhibit No. 7a, as compared with exhibit No. 5a, based upon an 8 per cent. return and reproduction new, shows for domestic rates, on exhibit No. 7a, a rate of 60.4 cents as compared with the rate of 47.8 cents in exhibit 5a, or an increase of 12.6. Similarly, on [fol. 260] industrial rates, exhibit No. 5a shows a rate of 21.9 cents, and exhibit No. 7a shows a rate of 22.8, or an increase of 1 cent per thousand cubic feet. Exhibits Nos.

7 and 7a also show, near the conclusion, the rate of return on the West Virginia property with the adjustments which have been above indicated. In Exhibits Nos. 8 and 8a the average price per thousand, in No. 8, and the industrial and domestic rates separately, in No. 8a, are shown, after allowing both for the effect of the increased rates on domestic consumption and for the adjustment by deducting 3 per cent. on account of gasoline extraction of certain portions of the investment and certain portions of the expense. The only difference between these exhibits and 7 and 7a is the application of the 3 per cent. for the extraction of gasoline. The net result of statement No. 8, as compared with statement No. 6, which would be the corresponding statement, shows an average rate on 8 per cent. return on reproduction new of 35.6 cents, whereas statement No. 8 shows an average price of 38.59, or an increase of 2.99 cents, and statements No. 8a, as compared with statement No. 6a on the basis of an 8 per cent. return and reproduction new, shows a domestic rate of 59.74 cents for 8a as [fol. 261] compared to 47.25 on 6a, or an increase of 12.49 cents, and for industrial rates 21.59 cents on statement 6a as compared to 22.47 cents on statement 8a, or an increase of .88 cents.

In connection with these adjustments which have been made on supposed result of the diminishing use of gas per customer by domestic consumers by reason of the higher rate, I have realized for a great many years that the use of any service was more or less proportioned to the rate charged for that service. Beginning in about 1920, and keeping it up to date as additional information came into our office, the witness began to make a study to see whether it could be determined what a fairly accurate relation was between the consumption of natural gas and the rate charged for natural gas, specifically, now, as compared to other service; and the result of that study, which is based on the examination of the effect of varying domestic rates on the consumption in a number of cities, is illustrated in a graph which the witness filed as part of his testimony marked Exhibit Uebelacker 7B, and which is attached hereto as part hereof. This diagram, Exhibit Uebelacker 7B, shows the relation between the annual average consumption of gas by domestic consumers and the price charged for gas.

The vertical measurements on the graph represent the [fol. 262] consumption per domestic consumer per year in thousands of cubic feet. The horizontal measurements represent the corresponding retail prices per thousand cubic feet. The above statement refers to the curve marked "P-C" on the graph. There is also on the diagram another curve marked "P-E" which represents the gross business per year per customer resulting from the multiplication of the number of thousands indicated on the vertical scale by the corresponding rates in cents per thousand indicated by the curve "P-C"; that he has checked the consumption of gas by domestic customers in the State of West Virginia on United Fuel Gas Company distribution systems against the prices and consumption as indicated on this graph, which was prepared before he started his investigation of the United Fuel Company's system, and finds that they check fairly closely with the prediction that would have been made from the curve for consumption at the prices charged; that at the rate charged by the United Fuel Gas Company the consumption falls fairly uniformly on the graph. The graph referred to is based on information from the Dominion Gas Company of Canada, the East Ohio Gas Company, of Cleveland, Ohio; the Kansas City Gas Company, of Kansas City, Missouri, and many more locations that were taken into account; [fol. 263] that it so happens that the range of rates in the Kansas City Company has been the widest of any company its size to whose records witness had access; that it has gone since 1912 from 25 cents up to 85 cents per thousand, so that gives the widest range of rates from which to observe the effect of the operation of rates on consumption in one locality. The said graph refers entirely to natural gas, and in no instance does it refer to artificial gas at all. In the experience of the witness the situation represented by the graph is typical of the natural gas industry throughout the country; that there might be individual instances that would fall off the curve on account of variation; that, for instance, in Calgary, Alberta, with a price around 50 cents per thousand, there was a consumption of over 300 thousand per domestic consumer per year, but zero weather is the rule there for eight months, and the situation is entirely different from the location on which the graph is

based. Individual instances of that kind might be found where the graph would not apply, but it represents the experience in the north central states.

That referring to the summary of valuation introduced in evidence as Uelselacker Exhibit No. 1, showing the repro- [fol. 264] duction cost new of the property and the same reproduction cost less observed deterioration, the witness states that in view of the fact that from his observation the plant was functioning 100 per cent efficiently—in other words, it was able to do 100 per cent of what a new plant or its equivalent would do—he considered the cost of reproduction new without any deduction for observed condition would be the correct measure of the value of the plant—in other words, as to functioning power the plant had not deteriorated; that the plant as a going plant would be worth the reproduction cost new; that as a dead plant this would not apply, but as a going concern, with customers connected and the plant in condition to give 100 per cent service, he would consider the reproduction cost the measure of the value of the plant; that to the best of his knowledge he has been cautious, including nothing in any of the reports that he was not convinced were actual facts; where there was any doubt he tried to be conservative, to take the lower rather than the higher figures, and that so far as the prices and values are concerned they represent his best judgment; that there is nothing included in any of the inventories or statements for value for the gasoline plants conveyed by the United Fuel Gas Company to the [fol. 265] Virginian Gasoline and Oil Company; that he made a valuation of these plants, which is contained in two volumes, and which included the gasoline extraction plants and pipe connections associated with them. It does not include any of the oil producing plants, nor any item of value for gas in the ground, nor does it include any item for gasoline reserves in gas acreage owned by the United Fuel Gas Company, but simply the value of the physical gasoline plants and the pipes and appliances used in connection therewith, and is not included in any way in the valuation of United Fuel Gas Company property. That in making said valuation of the Virginian Gasoline and Oil Company property he used precisely the same method as to which he has testified in regard to the United Fuel Gas Company

property; that the equipment is of apparently recent construction; that the reproduction cost new, including $350,000.00 for working capital as of December 31, 1923, of said plants of the Virginian Gasoline and Oil Company, is $2,771,250.00, and that the value of the same less observed deterioration is $2,399,561.00, that being the total value of the plants whether located in West Virginia or Kentucky; that the detailed inventory of the items of property is contained in two volumes, which the witness [fol. 266] filed with his testimony as Uebelacker Exhibit No. 9.

(Inasmuch as there is no dispute as to the value of the property included in the inventory Exhibit No. 9, but that the same is admitted to be correct, it is deemed unnecessary to include the said inventory herewith, and for that reason the same is omitted and only the total figures shown, as above.)

That the witness has made a calculation of the effect of the rates found by him to be necessary to produce the returns indicated in his report by crediting the expenses of the United Fuel Gas Company with one-half of the net gasoline earnings of the Virginian Gasoline and Oil Company, and that by crediting such expenses with one-half of the net gasoline earnings for the year 1923 the result would be a reduction of 1.984 cents per thousand cubic feet in the average price of gas required to produce an 8 per cent. or a 10 per cent. return; that considering the gasoline earnings for the year ended April 30, 1924, the last figures available for twelve consecutive months, the result of such a credit in revising the figures heretofore quoted as to the average price necessary to get an 8 or 10 per cent. return would be a reduction in the selling price of 1.69 cents per thou- [fol. 267] sand cubic feet. On the basis of the application of the existing contract for the sale of gasoline for the ensuing year up to April 30, 1925—that is, the ensuing twelve months—and the estimated production of gasoline, that reduction in the average price of gas per thousand would be reduced to 1.39 cents; and in making this estimate the witness assumes that the production would be the same as in the year 1923. That in the last year or more the price of gasoline sold by the Virginian Gasoline and Oil Company

has been dropping, and from present indications of the tendency that fall has nearly hit bottom.

(The above testimony of the witness Uebelacker was given on the 29th day of May 1924. Said hearing was resumed before the said Public Service Commission on the 30th day of June 1924, and the said Uebelacker used as a witness on that date, and in order that his testimony may appear consecutively in this record, the testimony given by him on that occasion is here inserted, in substance and effect, as follows.)

That in making up the exhibits 5 to 8a, inclusive, the witness used certain working papers taken from the records and books of the company, which are offered in evidence [fol. 268] as Uebelacker Exhibit No. 10 for the purpose of assisting the engineer expert and expert accountant of the defendants in checking the inventories and appraisals of Mr. Uebelacker.

(Inasmuch as it appears from the testimony of W. J. Hagenah, the engineer expert of the defendants, and John Jirgal, the expert accountant of the defendants, that all of these figures so used by Mr. Uebelacker in making up his reports are correct, as found by these witnesses, it is deemed unnecessary to include these working papers in the record, and for that reason said exhibit is omitted therefrom.)

That since he had testified on the previous occasion, as shown above, he has made up a statement showing the effect on the earnings of the United Fuel Gas Company by including therein 50 per cent. of the net receipts from the sale of gasoline, and also by including therein a one-eighth royalty upon the production of gasoline, for the year ended December 31, 1923, and also for the year ended April 30, 1924, and also, for the latter period, on the basis of a sale of all of the gasoline produced during that period at a price of 14 cents, which statements are filed as part of the witness's testimony, and are attached hereto, consisting of three [fol. 269] sheets, marked Uebelacker Exhibit No. 11.

(That another hearing was had in said cause before said Public Service Commission on the 22d day of January 1925,

at which the said witness Uebelacker again testified, and in order that all of his testimony may appear consecutively in this record, the testimony given by him on that occasion is here reproduced, in substance and effect, as follows.)

The witness testified as to the result of experiments made as to the relative efficiency and convenience of natural gas as a fuel as compared with other substances used for fuel purposes, either as domestic fuel or industrial fuel, and stated in connection therewith the following:

There was made in Cleveland in 1923 a series of tests on a standard house heating boiler, first, the ordinary so-called furnace oil with one of the commercial burners, natural gas, anthracite coal, and bituminous coal. These tests were all run on the same boiler, and were run at constant loads, that is, they indicated the relative combustion efficiency of the different fuels but not necessarily the over all or useful [fol. 270] efficiency. In other words, they simply indicated the proportion of the heat units contained in the different fuels which were useful, turned into steam in the boiler. That has given me a comparison of the combustion efficiency of oil and of natural gas, and in those tests they were found to be 72 per cent efficiency for oil as against 71 and I think it was two or three tenths for natural gas. In other words, the difference was within the limit of error in a test of that nature; you would consider them practically the same. They also gave me a relation between the combustion efficiency of bituminous coal and anthracite coal.

I have used in my own dwelling for the last two and one-half years an oil burner burning similar oil to that which was used in the test in Pittsburgh (?), and from my experience of some 15 or 16 years in that dwelling, where I previously used anthracite coal, I have found that the over-all efficiency of the fuel oil, which would be practically the same as the over-all efficiency of natural gas under the same circumstances, as indicated by those Cleveland tests, was the equivalent of about 120 gallons of oil burned where I had previously burned, in the same dwelling and under the same conditions, one ton of anthracite coal.

[fol. 271] Now, that relation takes into account not only the relative combustion efficiency of the two fuels, but also what you might call utility efficiency, and represents, as

well as the increasing combustion efficiency, the decreased use of fuel which results from having no stand-by, so-called, losses, in other words, no banking losses. With a coal fire when we wish to raise the temperature, a certain amount of coal is burned in raising the temperature of the mass of fuel in the fire box, and at the same time when we shut off the drafts a certain amount of coal is burned while that temperature goes down; whereas, with the gaseous or liquid fuel, controlled by a thermostat, the response is instantaneous. The minute the temperature rises to a certain point the fire is entirely shut off, leaving only a pilot light to insure reignition, and when the temperature drops, the fire is instantly all on. Now, the net result of the equivalents of 120 gallons of oil per ton of anthracite is that the amount of heat units in a gram of oil, —or it was the same in gas, as indicated in the Cleveland experiments, necessary to perform the same work in anthracite coal, is only 65 per cent, 65.7, I think, exactly. Bituminous coal is not as efficient in combustion in the ordinary household furnace [fol. 272] as anthracite coal. The tests in Cleveland show about sixty, I think, sixty-three or four per cent efficiency for anthracite coal as straight combustion efficiency, but at 52 combustion efficiency for bituminous coal. However, the conditions—I think their finding was a little wide—I think it would be more nearly 60 as compared to 63 for anthracite. Now, applying that ratio to the 65 per cent over all efficiency, that is utility efficiency, which was the result of my own experience, in my own dwelling, as compared to oil and anthracite, and I want to keep plainly in the record that there is a most exact equivalent between oil and gas. The net result of applying that decreased efficiency of bituminous coal to the 65 per cent of over-all efficiency of oil, the 65 per cent of heat units that were required in the form of oil that were required in the form of anthracite coal, is to give a net result of heat units in the form of oil that were required in the form of bituminous coal in house heating or about, out of the heat units, to give the net results of the volume of natural gas in house heating required to perform the same amount of work that would be performed by one ton of coal as 15,000 cubic feet.

[fol. 273] I also checked that by some experiments which were made under our directions in Edmonton, about a year ago, and the result was just about 15,000 cubic feet. In

other words, from the two sets of experiments made in Cleveland and in Edmonton, and from my own personal experience in handling the heating of my own house, the conclusion in house heating, taking into account the fact that the liquid fuel or gaseous fuel is controlled instantly and does not have to be brought up to temperature and then lowered again as the heating requirements change, was to the effect that about 15,000 cubic feet was the equivalent of a ton of bituminous coal.

That the above calculation did not take into consideration the other conveniences and saving in the use of gas as compared with coal, but represents the straight fuel equivalent calculation; that the expense of bringing the coal into the place where it is used, carrying out the ashes, and firing the coal into the furnace, would have to be taken into consideration in addition to the above; that back before the war the above items used to cost about $5 a month, allowing for a man to come in the morning and evening and tend the fire twice a day; that the witness does not know what it would cost today; that his individual experience was [fol. 274] that he burned a little in excess of 25 tons of anthracite coal for the heating season of five months, which would amount to practically $25 for services for the five months, or about $1 a ton; that the Cleveland test showed that the efficiency of oil and natural gas was about the same, and that applying the result of that Cleveland test or efficiency test to bituminous coal showed that one ton of bituminous coal was the equivalent in efficiency of about 15,000 cubic feet of natural gas.

(There was no cross-examination of this witness.)

Ralph E. Davis testified in substance and effect as follows at the hearing before the Public Service Commission of West Virginia on May 30, 1924:

That he lives in Pittsburgh, Pennsylvania, and is a consulting engineer, engaged in engineering work for a number of years, involving a study of natural gas and oil properties, and particularly the land and the reserve values of those properties; that he graduated in 1906 from the Engineering College of Wisconsin University and went into min-

ing work, first in the southeastern Wisconsin lead and zinc fields, occupying various positions, beginning as a miner, [fol. 275] and later superintendent of the mine; that he then went to Butte, Montana, as geologist for the Pittsburgh and Montana Copper Company, and about a year later was made chief engineer of that company, and remained in its employ for a little more than three years; that he then returned to the employ of the Vinegar Hill Zinc Company, for which he had worked in Wisconsin, in the capacity of consulting engineer; that he made examinations for that company of mining properties in a number of states, particularly for the purpose of advising it in regard to a policy of expansion—that is, as to whether or not they should acquire particular properties—and also to advise them in regard to the probable available reserves of zinc ore then known, so that they might formulate an idea as to what the market for zinc ore was likely to be during the next few years; that this work led him into work for that company and a number of other companies in a general consulting capacity; that in 1911 he became director of the Wisconsin Mining School, and while in that capacity personally gave the instruction in applied geology; that he continued his practice with geological work, and as geology became more [fol. 276] and more recognized as of important to oil companies, his work took him into most of the important fields of the country; that he personally examined properties back in that period, either oil or gas, in Pennsylvania, Ohio, Kentucky, Oklahoma, Wyoming, Louisiana, Texas and Mexico; that after the Federal Government adopted the tax law generally known as the law of 1918 it became necessary for the oil and natural gas companies of this country, and for mining companies generally, to have an appraisal made of their producing properties, and in conjunction with that it became necessary to determine, in so far as it might be possible to determine, the reserves, oil reserves in the case of oil property, gas reserves in the case of gas property, copper ore in the case of copper mines. By this term "reserves" is meant the gas, oil, or whatever the case may be, which is controlled by the particular company underground in connection with their production; that his experience permitted him to engage in that work, which then became important, and for the last four or five years he has been engaged largely in the determination of reserves, particularly

for natural gas companies and for oil companies, and to some extent for mining companies, and in the valuation of their properties, in order that they might comply with the [fol. 277] requirements of the Federal tax laws; that in addition to that he has made a number of examinations for the purpose of advising, in most cases the owner, as to the reserves of such property; that in some cases he has made such examinations of property not owned by his employer, but which such employer considered the possibility of acquiring, with a view to the advisability of such purchase; that he has never made any report at any time for the purpose of starting a stock selling campaign; that he has made studies of this kind for Hope Natural Gas Company, Reserve Gas Company, Peoples Natural Gas Company, East Ohio Gas Company, Carnegie Natural Gas Company, Manufacturers Light and Heat Company, Union Natural Gas Corporation, American Natural Gas Company, Clarksburg Light and Heat Company, Iroquois Natural Gas Company of Buffalo, New York, United Fuel Gas Company and Columbia Gas and Electric Company, merely including in this gas companies; that these companies embrace more than half of the Appalachian field.

That about three years ago he was retained by the United Fuel Gas Company to make a study of its producing property; that the purpose of that study was that the value might be determined and depletion determined in accordance with the Federal tax laws and the regulations there- [fol. 278] under; that some time thereafter he was asked by the management to extend that study so that it might embrace the entire property of the company; that the treasury regulations permit depletion of the producing property—that is, the property from which gas is being taken—and that is the reason that the first study covered only that portion of the property; that the second study was made for the purpose of advising the management as to the other property which they held and which was only partially tested, and this study required a period roughly of three-quarters of a year, in which work he was assisted by a number of members of his staff, possibly three men working for three-quarters of a year; that use was made of all the data that was available, including the reports and maps of the United States Geological Survey, the reports and maps of the State of West Virginia, the maps of the United Fuel

Gas Company, and all the information and files of the United Fuel Gas Company.

That deduction on account of depletion for income tax purposes levied by the Federal Government is controlled by article 211 of the Treasury Department's regulations 62, (1922 edition), which article 211 is as follows:

"Art. 211. Computation of deduction for depletion of gas [fol. 279] well—On account of the peculiar conditions surrounding the production of natural gas it will be necessary to compute the depletion allowance for gas properties by methods suitable to the particular cases in question and acceptable to the Commissioner. Usually the depletion of natural gas properties should be computed on the basis of decline in closed or rock pressure, taking into account the effects of water encroachment and any other modifying factors. The gas producer will be expected to compute the depletion as accurately as possible and submit with his return a description of the method by which the computation was made. The following formula, in which the units of gas are pounds per square inch of closed pressure, is recommended: The quotient of the capital account recoverable through depletion allowances to the end of the taxable year divided by the sum of the pressures at the beginning of the year plus the sum of initial pressures of new wells and less the sum of the pressures at the time of expected abandonment (which quotient is the unit cost) multiplied by the sum of the pressures at the beginning of the taxable year plus the sum of the initial pressures of new wells and less the sum of the pressures at the end of the tax years equals the depletion sustained for the taxable year. [fol. 280] The depletion for the taxable year is subject, however, to the limitations contained in article 201 (h)."

That he undertook to compile the data above referred to by him, not in compliance with this regulation particularly, but in compliance with the request of the company that he prepare a study and report showing the present reserves of the United Fuel Gas Company, the value of these reserves, and the depletion properly allowable, these being things necessary under the regulations, of which he informed himself in order to determine whether or not the peculiar circumstances of the property made it feasible to

follow this particular method; that the latter study made by him above, including all of the property of the company, had no particular relation to the Treasury Department regulation, but was very much broader than the work required for that purpose. The witness then displayed a large outline map of acreage controlled by United Fuel Gas Company, also oil pools and gas pools within said territory and classification of acreage, dated January 1st, 1924, to be used in connection with his testimony, and stated that he was asked to make a complete study of the territory held by the United Fuel Gas Company and to make use of every method that he thought useful. That the work began by [fol. 281] gathering together all of the available information that was in published form, reports already referred to above, and systematic review of these reports, in order that he might be completely advised of these studies and in order that duplication of work might not be unnecessarily made; that he studied the gas fields of the Appalachian field generally, first to determine what relation might exist between evident structural features of the country and the location of both oil and gas pools; that that study was made, and from the records of the wells drilled by the United Fuel Gas Company he was able to prepare some detailed structural maps of the area in which the company held acreage, and that he did prepare such maps; that every well and every dry hole that has been drilled by the United Fuel Gas Company, and, for that matter, by any competitor, so far as knowledge thereof could be obtained, was plotted on these maps, excepting only the oil wells, which are for convenience grouped into units, and by proper symbols the oil producing areas are denoted; that as a result of the gathering of this information, the plotting of all the producing wells and all dry holes, the mapping of the structure, both as revealed at the surface and as revealed from the formations punctured by drilling, [fol. 282] the area in question was divided into four classes, proven, either for oil or gas, probable, either in some cases for oil and in others for gas, and into acreage which appeared to have some value as prospective territory, and into acreage which appeared to be unfavorable. The large map marked Map No. 1 is a map on a reduced scale showing the whole territory by these major classifications within

the Kentucky-West Virginia border, and the scale is two miles to the inch. The object of this map is to present in summary form a picture of the entire area. The various geographical subdivisions are indicated on the map. This map shows two principal features of the territory as determined from the studies made. The areas enclosed in the red or pink border are the areas that have been classed as proven territory. It will be noted that there are several areas of this kind. The areas enclosed in blue border are those which have been classed as probable territory. The territories held outside of these two areas are either possible or unfavorable, and for the purpose of the study are not shown on this summary sheet. This map is marked "Outline Map of Acreage Controlled by United Fuel Gas Company, also Oil Pools and Gas Pools within said Territory, and Classification of Acreage, January 1st, 1924," [fol. 283] and is filed with the evidence of the witness and attached hereto as part hereof.

That wherever on this map acreage has been classified as either proven or probable there appears a numeral in each square, and that numeral indicates the number of square miles of territory controlled by the United Fuel Gas Company within that square.

The witness then produced another map and in regard thereto stated that it was one of five sheets of similar size which covered the same general territory that is indicated on the first map, the scale on the five maps so introduced being double that of the first map, and the same being prepared on this enlarged scale in order that each gas well and each dry hole might be shown in convenient form. The first of these maps is the more northerly part of the gas territory, on which is shown the town of Spencer, the town of Clendenin not being on this map. By reference to the small scale key map the location of any point shown on the large scale maps may be found upon the outline map above referred to. Every gas well is shown by a circle colored red, and if that gas well be owned by the United Fuel Gas Company it has a numeral opposite it, and without a letter, as indicated by well No. 694, which is a United Fuel Gas Company well; that if a particular well be owned by a foreign [fol. 284] company—that is, a company other than the United Fuel Gas Company—it is in like manner indicated

by a circle enclosed in red designated by a numeral with the letter F, indicating that it is a foreign well. The purpose has been to provide all the information possible in this study of the territory. The oil wells have not been shown individually, except in rare instances, but are indicated for each group of oil wells by a cross, the size of the cross indicating the number of wells; the size of the arm of the cross indicates the number of oil wells in areas from which oil is being produced—that is, the proven oil territory. The areas shown in reddish color are the proven gas pools—that is, areas from which gas is being taken—and the areas shown in blue are those belonging to the probable territory.

The gas reserves of the United Fuel Gas Company have been estimated by two methods. One of the methods is applied to territory classed as proven, and the witness explains the method used in regard to this class of territory as follows:

We have available the past production of the United Fuel Gas Company, that is, the total gas sold in any year less the total gas purchased in the same year. In other [fol. 285] words, I dealt with the net amount of gas produced by the company and actually delivered to the consumers. I made no claim for additional gas because there may have been line loss or for the removal of gas in any way, excepting where gas might possibly, over a period, have been used in carbon black manufacture. That, however, is very small.

Knowing the total production of gas in a given year, we have found what portion of that gas was produced in that year by each of the gas wells. That calculation is simply one of arithmetic. The data used are the volume of the well itself, that is the volume of the tubing in the well, the minute pressure obtained when the well is closed in and the number of days in the year the well is used.

Of all these things the company has a record, that record going back to 1912, and my studies in which the gas has been allocated to individual wells, going back and including the year 1913.

The company has also a record (complete in most years) of the rock pressure of each well; not absolutely complete, but essentially complete.

With that information in hand, I was able to determine [fol. 286] what the production has been in each year for the several gas pools, or, for that matter, of each of the United Fuel Gas Company's portion of each pool. Merely by grouping a number of wells, we know what their production is in any given year; and by averaging the rock pressure of the same group of wells each year, we know what the average rock pressure of the group of wells is in each year.

I have found it necessary to study the wells in this territory by groups, that is grouping the wells, and for this reason. Were we to take the Spencer Pool beginning say in 1910 when the first wells were drilled—six wells were drilled in this portion of the pool (indicating), we find they have an apparently small production, and judging by these wells alone there is a fairly large drop in rock pressure. I will say that the initial rock pressure there was about 1,000 pounds and we find in a short time there was a loss of 100 pounds rock pressure and gas production had been so much (indicating on graph representing production of these wells.) If we had based our calculations on that particular data only we would have failed to take into account the reserves of this United Fuel Gas Company territory (indicating territory in Spencer Pool on map).

If as new wells were drilled we took into account their [fol. 287] production and their rock pressure, and as old wells were abandoned eliminated from our average their rock pressure, we have been going down through the years with a true picture of production but a distorted picture of the actual average rock pressure of the pool. The new wells in newer territory would have been added to our total and therefore would affect the average only after such wells were drilled, and the elimination of old wells abandoned after reaching the low rock pressure would have indicated a higher average remaining rock pressure than the true situation demands.

In order to eliminate this difficulty the territory has been divided into areas, each area having usually been drilled in a period extending over from one to three years. The average rock pressure of the wells in such limited portion of a pool is correctly reflected by averaging the pressures shown for each well in the area—the average is not affected by bringing into the average the pressure of a new well

drilled in a distant portion of the pool. New wells may be drilled in such an area during the later years of its production. We find that such wells have a rock pressure similar to that of the other wells in the same area, hence they do not distort the rock pressure average used in estimating re- [fol. 288] serves. At this point I would like to illustrate the use of production and average annual rock pressure of a particular group of wells by referring to this graph which shows graphically the production and decline in rock pressure of a group of ten wells located in the Clendenin Pool (indicating). The circles along this line marked "pressure decline" show the average rock pressure in each year from 1913 to 1924. During the same period of time (1913-1924) these wells have produced approximately 4 billion feet of gas as indicated over here (indicating). Horizontal distances indicate production, vertical distances indicate decline in rock pressure. The graph shows a consistent decline in rock pressure as gas has been removed from the area in which these wells are located.

For these wells I have projected that line (indicating) in order that I might form an estimate of the reserve of that group of wells. The graph shows that Boyle's Law may be applied to the study of gas reserve in this territory. The gas reserve of proven territory is therefore based on the proposition that the same production will be obtained in the future for each loss of one pound rock pressure that has been obtained for a number of years in the past.

[fol. 289] This graph is similar to all other graphs prepared for each of the various areas of this proven territory. And I want to say that the reserve determined in the manner described (by subdividing the territory) is actually less than would be obtained were we to treat the territory as a whole. The method does not result in an increased estimate of reserve; on the other hand it indicates a smaller and in my judgment a much more accurate estimate.

Applying this method to the territory controlled by the United Fuel Gas Company and indicated as proven, it indicates total estimated reserves as of December 31, 1923, of 249.1 billion cubic feet. The acreage which has been classed as "probable," as will be noted from the map, is the acreage which lies a short distance from the proven acreage. To a considerable extent this acreage classed as

probable has actually been tested. The witness, indicating a particular area on the map, stated that in this particular area are more than 25 producing wells, and so in other parts of the territory that is classed as probable, saying further, I bring this point to your attention in order that you may not conceive the idea that the probable gas reserve is merely a possibility; it is, in one sense at least, partially [fol. 290] proven. The acreage is designated as probable and the reserve as probable because the witness had not been able to measure that reserve by the same clean-cut method applied to the proven acreage. In estimating the reserves of this probable territory, he first found what the production of gas—that is, what the total reserve gas—has been per acre in the nearby adjoining proven and developed acreage. In estimating the reserve area classed as probable he found what the reserve is on the nearby proven acreage. For example, referring to sheet No. 2, on which there is shown the greater portion of the Clendenin pool, the reserve of that pool, or the total production of that pool, has been determined as approximately 7.1 million cubic feet per square mile for each pound of rock pressure; that this determination was made by him. Referring again to sheet No. 3, let us say there is one square mile of territory classed as probable, and that that territory should be ranked as having a reserve which will produce 7.1 million feet per pound per square mile. The witness then determined what the gas reserve would be on that basis, and then modified that estimate, never increasing it, but generally decreasing it, to take into account the possibility [fol. 291] that some acreage may not prove productive, or that some gas will be drawn by competitors. The average discount applied to the entire probable acreage for this purpose has been 38 per cent. That the witness found what the reserves in this probable territory would be were it as good as the nearby proven territory, and then discounted that on the average 38 per cent to take account of the two things above referred to. That applying this method to the acreage indicated as probable, the witness finds that there is a total of 414.6 billion cubic feet of gas therein, making a total of 663.7 billion cubic feet in all of the acreage classed by him as proven and probable on the maps.

That he was present when Mr. Uebelacker testified, and that his report is the one referred to by that witness; that the gas reserve as set forth in his report is the net gas reserve that should reach the natural gas consumer; that the reason for this is that the United Fuel Gas Company has since 1915 recovered the gasoline; that the gas produced, carried to the consumer and sold had, during that period, been to a large extent stripped gas—that is, gas without the gasoline content—and the reserves are estimated on the basis of the past production and the decline in rock pressure, and inasmuch as this past production has [fol. 292] for this past six or seven years—seven or eight years—been stripped gas, the reserves as determined are therefore what would be stripped gas; that in making these estimates he has taken into consideration what others may do in adjoining territory; that in his study of the past he finds that the United Fuel Gas Company has taken the quantity of gas stated from this territory, and that the rock pressure has been reduced as shown in his report; that during the same period other operators have removed various quantities of gas; that having thus removed that gas, and the rock pressure of the area having been reduced to some extent, we assume that the same ratio of production from a given pool will be maintained in the future which has been maintained in recent years; that the witness knows of no circumstance which would indicate a change in this ratio for the future.

That the number of gas wells owned by the United Fuel Gas Company as of December 31, 1923, including those of the Warfield Natural Gas Company and the Cabin Creek Gas Company, is 796.7 wells, and that he has regarded the property of the Cabin Creek Gas Company and of the Warfield Natural Gas Company as identical with the property of the United Fuel Gas Company; that the slight discrepancy between his report as to the number of wells and [fol. 293] that of Mr. Uebelacker is accounted for by the fact that Mr. Uebelacker did not include some of the wells of the Cabin Creek Gas Company.

That the number of acres of proven territory, as indicated by the witness, is divided among the several pools as follows. In the Clendenin pool he considers 97,856 acres controlled by the United Fuel Gas Company to be proven

acreage; in the Spencer pool, 19,520 acres as proven; in the Kanawha pool, 3,136 acres; in the Triple-State pool in West Virginia, 3,257.6 acres, and in the Triple-State pool in Kentucky, 11,334.4 acres; in addition to which the Cabin Creek Gas Company has in the Kanawha pool 1280 acres which he considers proven, making a total of 136,384 acres; that of the acreage classified by the witness under the term "probable" there is in the Clendenin pool 38,912 acres, in the Spencer pool 8,640 acres, in the Kanawha pool 29,888 acres, in the Triple-State pool in West Virginia 236.8 acres, and in the Triple-State pool in Kentucky 7571.2 acres, and in various areas not designated as belonging to any of these pools, but located on the maps as indicated, 39,424 acres, in addition to which the Cabin Creek Gas Company has in the Kanawha pool 1536 acres, [fol. 294] making a total of 126,208 acres; that in addition to this, embraced in the two classes which he has mentioned as proven and probable, the company has 552,318.68 acres, making a total of 814,910.68 acres.

That he testified before the Public Service Commission of West Virginia about two years before he was then giving his testimony in regard to the proven acreage of the United Fuel Gas Company, and that the Commission considered the evidence given by him at that time as too speculative to be considered; that during the last two years in particular he has personally made studies for most of the gas companies named earlier in his testimony by methods similar to those above described; that these studies and the results thereof have been placed before the engineering division of the United States Internal Revenue Department at Washington, where they have been reviewed, and that in general the method used by him has been recognized by these engineers as essentially sound, and is accepted by the department as a basis for calculating the values upon which taxes are assessed; that the engineering division of the office of the Commissioner of Internal Revenue has reviewed such reports laid before it prepared by him for the United Fuel Gas Company, reports in which the reserves have been determined for the producing acreage, [fol. 295] as that is the only acreage on which the Commissioner of Internal Revenue allows depletion, and these engineers after reviewing these reports, have accepted the

same—that is to say, they have accepted the reserves as determined for certain parts of the field, and for other parts of the field such reserves have been reduced 10 per cent; that this only applies to proven or operated territory, as the Commissioner of Internal Revenue does not allow anything for depletion of territory not operated; that so far as his experience is concerned, since he testified formerly he made examinations of important gas territory, part of which was proven, part of which was not proven, and reached a conclusion regarding the probable future productivity of the same by methods similar to those above described for both classes of territory, which work was done for large gas interests which were guided to a material extent thereby; that the method used by him is a generally used method of comparatively recent origin, and is based on what is generally known as Boyle's Law and Boyle's Law states that the volume of gas varies inversely with the pressure, and that it has been accepted and recognized among scientific men as correct since the days of its [fol. 296] discovery by Robert Boyle, probably more than two hundred years ago, which simply means that the measure of pressure of the gas substance determines its volume; that the way this is applied is that the volume in a gas sand occupied by gas does not vary—at least, in this field it does not vary—during the removal of that gas—that is to say, the open space in the sand in which the gas is found remains equal in extent during the period of gas removal, dealing here with sand in which there is known to be practically no encroachment by surrounding water; that whatever amount of gas may have been originally in one of these pools, we judge that when the pressure has been reduced to any one half of the original pressure then one half of the original gas content remains; that he has found that practical gas men throughout the gas fields judge gas territory in part by the remaining rock pressure as compared to the earlier rock pressure; that this fact and the fact of past productive history of the pool have very great weight; that the two are and must be taken together, and he has considered both in the method employed by him; that this method is becoming recognized among gas men as very useful to them in not only observing the rate of de-

pletion of their own fields, but in considering the advis-
[fol. 297] ability of acquiring additional fields.

That he has assigned to the possible and unfavorable acreage no part of the 663.7 billion cubic feet; that he has made no estimate of the gas for that territory, as any estimate would be highly speculative; that it would have some probabilities; that he thinks there is no question but that part of that territory will be productive, by reason of the geological showing, by reason of the fact that it lies within this general gas belt, and by reason of the fact that since he made the classification of the territory and the maps based thereon he finds that there have been a few productive wells drilled in territory that he considered neither proven nor probable; that he made a different estimate in his testimony given on a prior occasion before the commission; that the reason of this was that he referred then alone to proven acreage, and so stated in the testimony, and to no other acreage; that he had not at that time made a study of the territory existent today or as to territory outside the proven acreage, but specifically at that time referred to the proven acreage of the company, and so stated; that the reserves estimated two years ago for proven acreage correspond fairly closely to the reserves stated in the
[fol. 298] exhibit now used by him for proven acreage, and that whatever difference there is in the relation of any figures is due to two things—that is, he had two years' additional information by which to be guided; that the territory for which probable reserves have been estimated was not referred to two years ago, and a considerable part of that territory has become probable as the result of drilling wells during recent years; that territory which he classed as probable at the time he prepared the maps introduced in evidence is now, in his judgment, practically proven, some parts of it probable, and the frequently of wells as illustrated on the maps in probable territory justifies that statement; that many an engineer, he thinks, would regard the territory indicated by him as probable to be proven territory; that he regards it as proven from the standpoint of wells that have been drilled and proven productive; certain areas of that portion that is proven which was proven at the time he made the gas classification, but he did not map it as proven in the sense that the producing pools

were proven; that the classification made by him in the maps is of December 31, 1923; that he has not paid much attention to what has been done since December 31, 1923; that the mapping of the probable territory was carried out [fol. 299] in the summer and fall of 1922, and that recently he took occasion to bring the maps up to date by placing on them all of the wells drilled since the date of the former work, and that the territory classed as probable in the acreage classification in his report of December 31, 1923, is exactly as it was in the report made to the company two years ago, except that in certain areas the company has acquired acreage, or in other areas has abandoned acreage, and my net amount of acreage shown in each area has been estimated, so that the adjusted figures I have given them are of December 31, 1923; that during the two years that have elapsed there has been a total of 215 wells drilled either by the United Fuel Gas Company or other companies in that territory which he classed and mapped as probable—that is, not necessarily within the acreage of the United Fuel Gas Company, but within the acreage shown on the map as probable—within the area of the same class of property as that of the United Fuel Gas Company; and that of these tests made 190 resulted in production and 25 have been dry hole; that this shows that the discount of 38 per cent given by the witness was excessive; that this discount, however, was to cover two things, the possibility of part of the area proving dry, and the other that a por- [fol. 300] tion of the gas would be removed by others; that he has prepared a comprehensive statement of a record of the logs of all the wells and their production, and various other facts about which he has been testifying, and the same is contained in a volume marked "United Fuel Gas Company, Report Showing General Geologic Description of Natural Gas Properties, Classification of Acreage, and Estimated Gas Reserve, as of December 31, 1923, Ralph E. Davis, Engineer, Pittsburgh, Pennsylvania," and also marked Davis Exhibit No. 1.

(Said report referred to by the witness, as well as the maps contained on six sheets, are filed as part hereof, the said report being marked Davis Exhibit No. 1 and the maps Davis Exhibit No. 2.)

(At a further hearing before said Public Service Commission on July 1st, 1924, the witness RALPH E. DAVIS further testified, and in order that all of his testimony may be shown consecutively it is here included, and is in substance and effect as follows:)

That he made up a report of the value of the gas reserves of the United Fuel Gas Company on a theory explained by the witness as follows:

I went on the assumption that the property of the United [fol. 301] Fuel Gas Company might be placed in use in whatever way is most advantageous to the owner of the property. That is, I considered what the present market demand is for natural gas. I considered whether that demand is sufficient to absorb the present output of the United Fuel Gas Company in markets that are at present more advantageous than some of the markets that are now being filled by the United Fuel Gas Company.

Among other such markets I considered the Pittsburgh market, where there is a large potential demand for natural gas. Among other industries, the steel industry does use considerable quantities of natural gas; and it is a recognized fact that were the natural gas industry in a position to supply a continuous supply of gas throughout the year, at fair price, much larger quantities might be used in that industry in that district.

I found, both from a study of the actual cost of producing steel by the use of coal and the actual cost of producing steel, melting steel, by the use of natural gas, the relative merits of these two fuels, and that study indicated that natural gas is worth at the present time about thirty-five cents per thousand when in competition with a good grade of soft coal.

I assumed, therefore, that the output of the United Fuel [fol. 302] Gas Company, were it able to deliver its gas to the Pittsburgh market, could be sold throughout the year at a price of not less than thirty-five cents to the industrial users, to steel manufacturers.

I have supplemented that study by inquiring into the present price actually paid by steel makers in the Pittsburgh district for natural gas and I find that the price is in the neighborhood of thirty-five cents. One steel company uses

several million feet of gas daily at a price of thirty-five cents at the present time.

Having in mind now the possibility of marketing gas in the Pittsburgh district for this particular service, it becomes necessary to consider what investment would be necessary to supply gas from the United Fuel Gas Company, as at present constituted, to the Pittsburgh market.

In reviewing the report recently prepared by Mr. Uebelacker, of the firm of Ford, Bacon & Davis, I found that he had made a calculation showing the investment necessary and the expected cost of delivering gas from Cedarville to Pittsburgh. I accepted that figure as a sound figure representing the probable future cost of delivering gas that distance.

It then became necessary to determine the actual cost of [fol. 303] the United Fuel Gas Company during some recent year, and I chose 1923, in the production and delivery of gas to Cedarville; and, again, I found that Mr. Uebelacker had covered that ground, and I accepted his figure as being a proper figure, one that I was sure was found in a correct manner and one that I would arrive at were I to make the same study that he had made.

The total cost of producing and transporting gas to Cedarville and carrying it from Cedarville to Pittsburgh, without including any earnings on the value of the property used, without including Federal Income Taxes, but including local taxes, overhead costs and depreciation, not including obsolescence, amounted, as I recall the figure, to about 14 cents. I can give you the figure exact if you will allow me to. The cost of transporting gas from Cedarville to Pittsburgh is $0.0526 per thousand cubic feet. The cost of producing and delivering the gas to Cedarville is $0.07989. These two costs give a total of 13¼ cents. It was my understanding from Mr. Uebelacker's figures that no line loss was taken into account between Cedarville and Pittsburgh, and, inasmuch as I thought that should be included as a cost, I allowed 1¾ cents per M as an additional cost. These three [fol. 304] figures total 15 cents, and that figure represents the cost, based on the 1923 experience of the United Fuel Gas Company and its subsidiaries, of producing and transporting gas to Cedarville, plus the probable cost of transporting gas from Cedarville to Pittsburgh, with the allow-

ance for line loss between Cedarville and Pittsburgh of 1¾ cents.

These costs include, as I have stated before, no allowance for earnings on the value of the property, nothing for Federal income taxes, nothing for amortization, but do include all other costs, including depreciation.

From this point, I have treated the property of the United Fuel Gas Company as engineers generally in valuing mineral property treat these properties. The usual method of valuation is to determine the present worth of the property, based upon the expected net earnings. The expected net earnings are estimated, being based upon proven reserves, probable reserves, estimated cost of production, either a fixed price for the output or a variable price, as may be justified by each case, and the rate of return expected by the investor.

From a study of the actual costs to the United Fuel Gas Company for some years past, I found that there is an upward trend in the cost of producing gas of approximately [fol. 305] one-quarter cent per thousand per year. I assumed that this trend will continue. I assumed that the value of gas in the Pittsburgh district will not change. That assumption does not represent my view of the future. I believe prices will change and will change upward.

I estimated the number of cubic feet of gas the United Fuel Gas Company may reasonably expect to purchase in the next eight years, basing that on chart in effect on January 1, 1924; and I estimated also the amount of gas that I believe they will be able to produce for the first eight years and thereafter for another ten years; I estimated the number of wells that I believe will be required to maintain the expected production, and the amount of new investment necessary; I assumed that the investor in this enterprise would require an annual return of 8 per cent.

That calculation, carried through, indicates a total value of the property which is being valued, leasehold property and the equipment now in place on that property which could be used in serving the Pittsburgh market, a total value of $52,181,538.17.

I have stated that the property for which this value is found includes certain equipment. Now, that equipment [fol. 306] consists of wells, well equipment, field lines, compressor stations, and a considerable portion, but by no

means all, of the transportation system, and certain general property, the total value of which has been determined by Ford, Bacon & Davis on the basis of reproduction value less depreciation to be $19,723,409.00. If the value of the leasehold property is desired the difference between these two figures is $32,458,129.17.

That calculation, I might observe, appears rather technical, but I would say that the method of valuing mineral property has been well established, particularly other types of mineral deposit. This method follows the accepted practice of the majority of mining engineers. The value which I have stated is, in my judgment, a fair value of that property.

That the value of gas reserve, as above determined by him, does not consider any particular acreage at any given amount per acre, but considers what the whole property as a unit is likely to produce in the way of earnings over a period of 18 years, and the amount of gas which the calculation assumes will be delivered from the United Fuel Gas Company's property in 18 years totals this 636 billion cubic feet; that he had shown in a previous report that the United [fol. 307] Fuel Gas Company's property contains a somewhat larger quantity of gas in the proven and probable territory, and from that it will appear, and it does appear, that the value indicated by him is the value indicated for that property, or the major part of that property; that this answer would be a sound answer if the United Fuel Gas Company did not own the entire 815,000 acres which it does own provided that it did own those selected portions of that property that he classed as proven or probable, and with that a considerable portion of the remaining acreage which would be held to protect the company's valuable acreage or average believed to be more likely valuable, and for the prospective value it might have itself; that he has confined his estimate in this calculation to a term of 18 years, but that he believes that it will require more than 18 years to exhaust the property and produce all the gas that can be produced from it; that in making the calculation he assumed the cost of production would increase from year to year but the price at which gas would be sold would remain stationary; that if the price at which gas could be sold from year to year should increase then this would have to be taken into ac-

count; that he has reduced the study indicated by him to writing, and files the same as part of his evidence marked [fol. 308] Exhibit Z, and the same is attached hereto as part hereof; that in the report filed by him, Exhibit 1 he took into consideration some of the territory of the Cabin Creek Gas Company, to wit, 8,005 acres, of which he classed 1,280 acres as proven, 1,536 acres as probable, and the remaining acreage was considered possible gas territory; that these amounts were less than given by the witness on a former occasion because of the fact that he found that the Cabin Creek Gas Company had produced approximately two thirds of the total gas that it could expect to produce from its proven acreage; that was as of December 31, 1923; that he did not even think of depleting the probable acreage at all, so he made an estimate of the quantity of recoverable gas that might be expected in the probable territory by determining how much gas could be recovered from it were it equally good as the territory that was proven, and then reduced that by 75 per cent.; that this large reduction was made for the reason that the Cabin Creek company had a considerable number of oil wells and gas wells which were removing the gas at rather a rapid rate, and it was his judgment that by the time the remaining probable acreage, what he technically called probable acreage, became drilled, the rock pressure in that acreage would be reduced to an aver- [fol. 309] age of a little more than a quarter of the original.

Cross-examination:

The witness was cross-examined on December 29, 1924, in substance and effect as follows:

That he had filed with his testimony certain maps, one showing the proven and probable productive gas fields, and another map of five sheets indicated the pool and the wells in the several territories; that he began to work on these maps about two years or possibly two and a half years ago; that none of the work on said maps or sheets nor the single additional map had been prepared at the time he testified before the commission in case No. 1251, but the work had been undertaken a month or two or three prior to that time and was then in progress, and was continued until all the data had been gotten together and then transferred to the

maps; that while the outline map is dated October 1st, 1922, he had brought this map up to date by plotting on it the additional data—that is, up to December 31, 1923; that the doing of this work did not change any of the pools, so far as he recollects, in any detail, but that if the work had been undertaken first as of the more recent date possibly he would have changed the areas which he calls proven to [fol. 310] some slight extent; that when he went to bring the work up to date he found that there had been a few wells drilled a very short distance beyond the territory classed as probable territory, which he considered uncertain territory, and in a few instances drilling had resulted in productive gas wells, and therefore if the work had been done as of last June this territory would have been mapped as proven and would have enlarged the proven gas area.

That the reference to the various pools contained in the testimony are indicated upon the map; that the Spencer pool includes the area in the most northeasterly corner of the outline map, extending from a point near the center of Jackson county and close to a symbol on the map "27" within a circle, and in a northeasterly direction, something like 24 miles beyond the point at the northern edge of the map and just east of a symbol "19" within a circle; that the Spencer pool, as he considered it, is a strip of territory, as just stated, 20 to 24 miles in length, and varying in width from about 1½ miles to 3 to 4 miles; that the Clendenin pool, as he considered that pool, is the largest area shown on the map having a red outline; that the town of Clendenin is in the south central portion of this pool, and it ex- [fol. 311] tends north from the town of Clendenin about 15 miles, south about 5 miles, east about 7 miles, and west an average distance of about 7 miles; that the Kanawha field, as he considered it, lies to the south of the Clendenin field, about 15 miles south of the town of Clendenin and a little to the west; that the Cabin Creek field lies further to the south some five or six miles; that it is shown on the map by an area enclosed in a green border, being primarily an oil field, for which reason it is shown in that manner; that the thirty-eight or thirty-nine thousand acres lying in these fields which he considered probable would include territory owned by the United Fuel Gas Company lying within any of the areas enclosed in a blue border;

that there is a territory extending in an east-west direction about 25 miles long and averaging possibly five or six miles in width extending from a point near a symbol on the map and figure "65" enclosed in a circle, and easterly, two or three miles beyond a symbol "67" enclosed in a circle; that the United Fuel Gas Company owns considerable acreage in that belt, and I consider that territory as a whole probable for the production of gas; that the territory outlined in blue, having within its lines the symbol "76," lies south of the above referred to territory, extend- [fol. 312] ing in a northeasterly-southwesterly direction some three-fourths within the confines of Boone County and a fourth or thereabouts in Lincoln County; that it is one of the fields in which the acreage is included in the lump sum of thirty-eight or thirty-nine thousand acres, so far as the company has territory therein; that it will be noted above that the company controls very little territory within that area; that the numerals within the various squares on the map indicate the number of square miles controlled by the United Fuel Gas Company within the respective squares, and do not indicate the amount of any particular class of acreage therein; that sometimes the square lies entirely within the probable territory, sometimes part of it is classed as probable and sometimes part as proven, and sometimes as possible; that unless all the acreage is either within or without the blue lines, we have estimated that the United Fuel Gas Company acreage within such a square lies partly in the probable and in part outside of the probable; that for example we have a square of which about 50 per cent. is within the blue lines, and another is a square in which only about 10 per cent. is within the blue lines; that in the latter case 10 per cent. of [fol. 313] the territory controlled by the United Fuel Gas Company within that square would be treated as probable, unless it appears that all of the territory, or a greater part of the territory, owned by the United Fuel was actually within the blue area; that the lavender color indicates that there are few gas wells within their borders; they are areas in which additional drilling is required in order that the gas may be commercially removed; that unless additional wells were drilled within these areas the gas would likely, to a large extent, travel to outside wells or be left in the

sand; that such areas are indicated on all of the large scale maps where they exist; that he applied one method in estimating the gas reserves in the proven territory and another method in estimating the gas reserves in the probable territory, and that the reason the first method was not used in the latter case is that there is insufficient data available from the territory in that classification to form the basis of the first method; that as to the method of estimating the proven territory, the company has maintained for many years practically all of the following data, some of which they have kept a careful record of since the date they began business—the total gas sales, the total gas purchases—and for the purpose of his study he assumed [fol. 314] that the gas produced by the company in the difference between the total gas sold, including that which it used in its own operations, and the gas purchased; that there is some gas lost in transmission and distribution; that the net figure which he arrived at fails to give credit to the company wells for gas which they certainly produce, but which was lost before reaching the consumer; that the company has tested the rock pressure in each year, with some exceptions, at all wells; that is, the well is shut in for such a period of time as to permit the taking of the pressure test, showing in each case how long the wells were shut in for each test; that the company's practice in this regard is very good; that the ascertainment of the rock pressure of a well or group of wells depends on the particular field and the particular well and that the practice of the company has been to a large extent in this respect guided by convenience; that it has been convenient to shut the wells in in August or Setpember, when the demand is for the minimum amount of gas, and it is the time of year when it is rather easy to shut in a large number of wells; the general practice has been to shut in the wells for a week or two; that in his work he took all the rock pressure data, and he regarded the rock pressure data obtained in August or September the most important, as revealing the true condition of the sands, the wells having been shut in [fol. 315] for a longer period at that time; that he took into account not only these rock pressures but all data available whenever taken; that in his judgment, generally speaking, all wells have been shut in for a sufficient time each year to

give in any case an accurate rock pressure reading, and in most cases a reading that is at least approximate; that in an area of 350 or 400 acres, with a half dozen wells, three of which were shut in and three not at the time the rock pressures were taken, there would be some effect, but not to a serious amount; it would tend to lower the readings instead of reading the true pressure, which we will say is 300 pounds; the effect of other wells being not shut in would reduce that pressure to 290 pounds, and the net result would be that it would be giving our field as a whole credit at the end of 1923 with a slightly lower rock pressure that we would have found had we been able to shut in each well for a sufficient time to allow the gas pressure to equalize; that it is true, were all wells shut in for two or three weeks, we would have a set of figures that would give us a slightly higher average than the average used by him; that he thinks the method used by the company is a practicable one to ascertain a fairly equalized pressure throughout the fields; and in explanation of these rock [fol. 316] pressure tests the following testimony is given verbatim.

Each of the several fields has been subdivided into areas which are indicated on the map. Each area is indicated by a letter. The purpose of this sub-grouping was to throw into single groups wells which have in a given year, and during several succeeding years, a similar rock pressure history. For example, anyone of the areas there in the Cabin Creek Pool, take Area "B," were we to refer to the detailed data, we would find that the several wells included in that group have approximately the same rock pressure in any given year; 1920 is about the same for the several wells; in 1923 again it is about the same and of course lower than in 1920.

The purpose of that sub-grouping is to eliminate a difficulty that arises if we do not so subdivide the field. I will illustrate that difficulty. When the Spencer pool was first drilled, the drilling was near the central portion of the field,—the rock pressure was about 1,000 pounds; after two or three years drilling, which extended only four or five miles, the rock pressure was brought down, according to the data, to about 800 pounds, and there had been a certain production. Were we to base our estimate of that

[fol. 317] date, on the data as then available, we might say with 200 pounds off the 1,000 pounds original pressure, 20 per cent of the gas has been withdrawn and 80 per cent remained. Now, as the years go by new wells are drilled, both east and west; the new wells come in at 1050 pounds and in some cases 950 pounds; we keep bringing into our areas new wells, giving new production, and maintaining our average rock pressure up, and finally when older wells are abandoned at a very low pressure they are thrown out, and we have in 1920 an average rock pressure of, say 200 pounds. If we study the thing by particular areas we can take this area from the date it began to produce, and come down through the years and see its future fairly clearly. The average rock pressure as determined by wells in that area is not subjected to error by the introduction of rock pressure readings taken ten miles away. Furthermore, we will study the gas reserve of the proven area; we know what they are, and if the proven area eventually becomes more extensive than we now find it to be, then there will be additional gas,—an additional quantity estimated for the several new units of this field.

Now, I have covered herethe detailed method of estimating gas reserves for proven territory. To this extent [fol. 318] the proven areas are subdivided, so we are dealing with individual groups of wells having a similar rock pressure history, and we find in each year the average rock pressure of that group of wells; second, the total gas credited to all wells in a given year is the net gas sold to consumers and used by the company, and over and above that which is purchased.

The next step is to determine what portion of the total gas produced is produced by the wells of a particular group. That is where we use the minute pressure, which has been spoken of. We desire to know——

Q. (Interrupting.) What do you mean by minute pressure? Explain that for the record.

A. The wells are feeding into a line having a line pressure of, let us say, 50 pounds. That of course will vary; different lines have different pressures, and the same line will have a greatly different pressure in the summer than it has in the winter. A given well is shut in and at the moment the valve is shut, the line pressure has been read,—

we will say that reading is 50 pounds, at the end of one minute the pressure on the well side of the valve is read,—that pressure may be 55 pounds; if the well is feeding into [fol. 319] the line it should show a pressure above line pressure at which it has been shut in; a two minute pressure would be one taken similarly and for a period of two minutes.

Q. What has been the practice of the company with reference to the pressure they have taken? Do they take one minute, three minute or five minute pressures?

A. That practice has varied from year to year. We find in some years the company has taken one minute pressures and a five minute pressure, and in another, certain other years, have failed to take one minute pressure but have taken five minute pressure.

For the purpose of the work we were doing we found it desirable to find out the general relation that exists between a pressure taken for one minute and one taken for five minutes, so that we could deal with the data within those years where we had only the five minute pressures, and in that way we have been able to let this study continue through the years from 1913 to 1923. Now, having for each well the minute pressure above line pressure, and the cubical content of the well,—that is the volume from the point where the valve is placed when the pressure is taken, to the bottom of the well, a simple calculation indicates what quantity of gas flows into that space in one minute; it [fol. 320] raises the pressure, let us say, 5 pounds; that is a fairly simple calculation. The company maintains also a record of the time that wells are used——

Q. (Interrupting.) By that you mean the number of days a year that it is feeding into the line?

A. Yes, sir. Now, we have for each well a calculated gas production per day. Knowing the number of days that well has been used, we can calculate the amount of gas it has produced theoretically per year; the total of that compared to the total found by deducting from gas sales your gas purchasers would indicate what correction factor should be applied to each well to either reduce or increase the theoretical output to what I will call the actual output. In that manner we found the production in each year for each well,

and by grouping the wells we found the production for a given group of wells in that year. We found the decline in rock pressure and the production in that group of wells for each year, and we find there exists a definite relation between the decline in rock pressure and the output of gas, for each unit of gas removed there is an equal—on the average an equal decline in rock pressure; each million feet removed from one of those areas in 1921 has the same [fol. 321] effect on rock pressure that a million feet has in 1923. That is true, on the average, as illustrated by the graphs which were submitted in this report.

Q. Do I understand you to say, take, for instance, the Spencer field: you stated a few moments ago as to how you grouped certain wells drilled a few years ago, and if a well was drilled to the east or north of this area, the rock pressure might be higher than the average of the group, after a million or five million or ten million feet is taken out of the hole, would there be the same proportion of a decrease in rock pressure of the newer drilled wells as the older drilled wells?

A. No, sir.

Q. Now, Mr. Davis, is there any other method used of which you are advised to ascertain the gas reserves in proven areas?

A. Yes, sir.

Q. What other method is used?

A. Another method of estimating gas reserves for proven areas will be to determine the output of that area in each year for such a period of years as you have the data: generally it would be that if the proven areas are as well drilled [fol. 322] up as most of our proven areas are, the output will show a decline from one year to the next year, and it has been, in the past particularly, considered good practice to develop a graph or a curve from the data just described, and by extending that graph or curve into the future judge the quantity of gas remaining.

Q. Is there a uniform decline from year to year, or is there a greater decline, say the first or second year, than there would be if the life of the well or the area was nine or ten years?

A. If we had an ideal condition under which the group of wells were being operated, the decline curve method

which I am describing should, I believe, give exactly the same result or thereabouts, as the rock pressure method, but the conditions are usually not ideal; the wells are used one year, say 340 days, in the succeeding year, say 280 days. Now, we have there a variable demand for the gas.

Q. A very uncertain future, isn't it?

A. Well, we sometimes overcome that difficulty by reducing our data to total production per day, and sometimes that is a very efficient aid. Another thing that makes the work very difficult, the application of this method very [fol. 323] difficult, and that is the variation in line pressure against which the wells deliver gas. This may be at one time, say 250 pounds, later 200 pounds, and at a still later time a lesser amount, it varies,—the wells become at times inactive and it is very difficult to make an estimate, when you know you are going to deliver in the future with a changing line pressure. I think it can be done but it is a laborious task.

Q. In this case nor in 1251 this latter method was not used, is that a fact?

A. I think in Case 1251 the method I have just described was used; I am quite sure it was.

Q. That is to say, the graph showing the details, etc. in 1251, the reserves were ascertained by use of a decline curve rather than rock pressures?

A. I would like to say, Judge Rummel, that at the time that was done, two and a half years ago, there had been very little success attendant upon the application of Boyle's Law to the study of gas reserves, the reason being that people generally took a field and studied it as a whole,—they met the difficulties I described a few minutes ago, but in failing to break the field up into units they got a rock [fol. 324] pressure decline graph which did not show a consistent relation between rock pressures and production.

Q. Well now, this Boyle's Law you talk about, that was enunciated many years ago?

A. I think in the neighborhood of two hundred years ago.

Q. And you mean to say only within the last two years has it become recognized in the natural gas industry as being a more dependable way of estimating the gas reserves,—a more dependable and stabilized way, I will say?

A. My experience might not have brought me in touch with work that may have been done more than two and

a half years ago in particular fields where the rock pressure method was applied, but I am rather confident of this statement—that the method has within the last two or three years had very much wider acceptance than it had prior to that time.

Q. What has been your experience, say during the past ten years, in the use of the Boyle's rule, as compared with the decline curve method in estimating gas reserves?

A. I find that, where I used Boyle's law, as it has been used here, the thing that we expect will happen does happen, [fol. 325] to a rather close degree,—a much closer degree than where reserves are estimated by the use of the decline curves.

Q. And over what period of time now do you make this observation as being your experience?

A. Suppose that I have found this particular method useful within the last two and a half years, but have applied it in eight or ten large companies, making use of their data over the past ten or twelve years. That is what I have actually done and what was done in this case,—I have presented to you a study, applying Boyle's Law to each of those areas from 1913 to 1923, and you can observe for yourself what we might have expected at the end of 1915 in any particular area and judge how that compares with the actual subsequent experience.

Q. From that experience you apply that to the future for approximately the next eighteen years?

A. Yes, sir. In the application of Boyle's Law, years are not a factor; it's the rate at which you take the gas out.

Q. Well, it's the result of the application of that law and the knowledge of the amount of gas being taken out by this company each year by which you arrive at the number of years it will take to exhaust this reserve of six hundred [fol. 326] and sixty-three billion cubic feet of gas?

A. I would arrive at eighteen years as being a fair and a practical estimate, but so far as Boyle's Law is concerned, the number of years might have been twelve, and it might have been thirty.

Q. Certainly, depending on the number of feet of gas taken out per year?

A. Yes, sir.

Q. What have you to say as to the method which you have adopted in arriving at the so-called probable productive periods in attempting to estimate a gas reserve for an area?

A. I have found what average production has been obtained in the past, and what reserve we can expect in the future for the nearest proven territory. For example, in estimating reserves for this probable territory, I find what the ultimate reserve—past production plus estimated future production—we can obtain from this proven territory; Boyle's Law has served me in studying the proven. Now, in attempting to estimate the gas reserve or nearby probable acreage, I find what the ultimate gas delivery for the proven acreage is, and apply that figure to my probable acreage, in each case taking into account any factors which, [fol. 327] in my judgment, should cause me to reduce the estimate, and in no cases increasing the estimate.

Q. Well now, as to the rock pressures of these probable areas, over what area do you estimate an average rock pressure that you apply to the proven area?

A. Well, if I am dealing with a particular probable area, such as the one here, I judge the rock pressure of that area by considering what the rock pressure actually is at the time of my investigation in any test wells which may have been drilled within that area. If no such wells have been drilled in that area, then the nearest wells within the proven area.

That there is undoubtedly a greater quantity of gas within each of the areas indicated by the lavender color than there would be at the present time had there been some wells drilled therein; that these lavender blotches indicate areas of higher rock pressure than the remaining part of the field outside of those areas, and that he has taken that into account in estimating the total or ultimate reserve of the proven area; that he has taken into account the actual rock pressure as revealed within the areas where any wells are, and has given the lavender blotch areas credit for a [fol. 328] somewhat higher rock pressure; that he knows this is the proper thing to do, because there are within some of these areas a few wells, and an examination of the rock pressure of those particular wells shows it to be higher than the average of the surrounding wells.

That referring to the blue area adjoining the area in question shown on sheet No. 2, there are three wells drilled just within the blue area, and close to the pink line, and two even beyond the blue area and just over the border in territory classed as unfavorable; that the reason he included the large area in blue which adjoins the proven area which is marked by the figures "213" is that there is a gas pool which has been proven in an easterly-westerly direction for 16 miles; the eastern edge of the pool has not been found, but out beyond it an average distance of about three miles a number of dry holes have been drilled, indicating that this pool does not extend eastward, or probably does not extend eastward, beyond that line; somewhere between the line of dry holes and the present edge of the development the pool will end, and it is a matter of judgment as to what part of that border territory should be classed as probable and what part as improbable; that the [fol. 329] reason he classes as probable territory the territory included in square 213 indicated on the map, notwithstanding the dry holes indicated thereon, is that there was a time when there was only one well in this territory, and if a man had at that time thought the only probable gas territory surrounding that well was the particular acre or two the well was on he would have been using very poor judgment; now that field has extended in all directions a good many miles from its center, and he considers it better judgment to consider that the field will probably extend a further distance when on the average it may measure say a mile or a mile and a half than to consider it to extend only a few hundred feet; that he has considered information available showing the rock pressure of all wells within the edge of the pink line on the map, and that the reason that he delimited the border territory as indicated on the map was not entirely because of the presence of dry holes, but that when he indicates a territory as probable he means that it is really probable, and that he would not want to go on indefinitely at the point indicated on the map to the east calling it probable, even if there were no dry holes; that the line drawn on the map indicated in the southeasterly direction by the letter E at each [fol. 330] end was one made by a vertical section plotted across the map; and his attention being called to four dry

holes in proximity thereto, the witness stated that in his judgment the probable producing territory extended beyond that cross-section; that while there are no wells beyond that, and the dry holes are there in the places indicated on the map, still if a well were drilled in the territory along the line indicated it would be 50 per cent closer to a producing well than to any dry hole on the map, and that in classifying a territory account must not only be taken of dry holes, but of producing wells also; that a well located midway between the two wells, No. 263, a company well, and No. 654, a foreign well, would be located at least a quarter of a mile closer to a company well, No. 1075, than to either of the dry holes mentioned; that this would not apply also to the territory to the north and east of the pink line and toward the dry hole F-4292; that since the map was made it appears that there has been drilled to the east of the proven territory six locations, three within the blue a short distance from the proven area, producing wells, two drilled beyond the area classed as probable and within territory that was classed as unfavorable are producing gas wells, and that one well [fol. 331] drilled about a mile over into the territory classed as unfavorable gave a show of gas but has been abandoned, so that the record of tests made since the maps were prepared is rather in favor of the mapping having been conservative; that the first three wells indicated by him are close to the border line between proven and probable, the same being about four miles from these three wells to the eastern line of the so-called probable acreage; that the witness knows of no wells between these three wells and the eastern border line; that there is about three square miles of territory within the probable territory and northeast of the pink line that intersects it at the point indicated on the map; that in the square marked 2200 the United Fuel Gas Company has 3.77 square miles, in the square south of it 3.30 square miles, and the square east of 213 has 2.52 square miles, in all about 9.1 2 square miles, or about 6000 acres; that there is shown on the map a square with the red letter J and a dry hole marked Foreign 2710, and that in a northeasterly line it more or less lines up with the dry hole just east of the so-called probable territory, F-654; that the reason he included this

territory as probable is that it is his best judgment; that a few months ago he came down and was talking about a big well that had just come in and he looked it up on [fol. 332] the map and found it slightly east of the line that would connect the two dry holes mentioned; that the reason he included the territory in the area enclosed in pink with the letter "T" as proven territory is that he thinks it highly probable that the amount of territory he enclosed as proven will be much exceeded at this point; that the gas reserves there were measured by Boyle's Law, and no addition made for any probable acreage around, so it does not matter whether there are ten acres or one thousand acres there, but he thinks it is a very conservative estimate of the extent of the territory in which it would be expected to get gas if additional wells were drilled, and that the estimate is based upon Boyle's rule regardless of the number of acres; that the territory included is about 500 acres; that in estimating the probable territory he figured on about 7 million cubic feet of gas per square mile per pound of rock pressure, and from that deducted 38 per cent on the average; that this factor was used in the blue area surrounding the Clendenin field; that in the Lincoln county field a considerably smaller factor was used; that in the area surrounding the Clendenin field he was dealing with the probability that the Injun sand would produce the gas, and so that sand was dealt with; [fol. 333] that in the case of the Kanawha field the factor was 19 million feet per pound of rock pressure to the square mile, and in the Lincoln field 3.9 million feet per pound of rock pressure per square mile; that in the Lincoln and Boone county field the factor used was 4 million feet, and that in the long probable area in Logan county 3 million feet.

His attention being directed to sheet No. 4 of the map and to the numerals 65, 66 and 67 thereon, he stated that it was evident that a large number of wells were drilled by someone within that area; that the width of the area was from two miles to about ten miles, and it extended east and west about 22 miles or more over onto the next sheet, that carries the numeral 67, a length of something like 25 miles all told; that he arrived at the rock pressure within this area by carefully checking the wells drilled by

the company therein; that the Columbia company owns a large number of wells in that area, which are marked with the letter C, and that he had access to all the information both of the United Fuel Gas Company and the Columbia Gas Company; that the Columbia wells are practically all on the western edge of the area; that on account of the dry holes indicated within the area and the probability that some of the acreage will be non-productive he discounted [fol. 334] the answer which otherwise would have been arrived at 25 per cent.; that this 25 per cent. was the same figure that he used to make up the 38 per cent. discount as to all the probable territory; in some cases the discount was 50 per cent., in some 35, and that in this case it was 25; that the average over all of the probable acreage was 38 per cent.; that he figured out for each field the estimate of the amount of gas reserve; that he estimated the amount of gas reserve for the areas marked with the numerals 65, 66 and 67 as calculated by him for that territory was 78.8 billion feet, which estimate includes the reserves of eight wells which have been drilled by the United Fuel Gas Company which are in reality proven but which are classed as probable because they form a rather small part of the total; that this covers quite a lot of acreage, something like 51.6 square miles; that over to the northwest edge of the territory the Berea sand is giving some gas, and throughout the remainder of the territory something like three out of four wells have produced gas in the Big Lime; that in a territory where gas is worth very little these Big Lime wells would be considered non-dependable, and a company would scarcely lay a line to gather such gas, but when gas becomes [fol. 335] valuable 3 million feet in a Big Lime well will be considered a fair well; that he does not think they are liable to turn to water at any time; that it is true that it is regarded as the poorest oil and gas sand in the section; that, however, it has one great advantage over most of the others, and that is that you are more sure you are going to get it; it is a very extensive formation, and continuous, and you would be surprised if you did not get gas in the Big Lime; that the average life of wells in the Big Lime would vary from possibly five years in some parts of the territory to more than fifteen years in the Triple-State field; that throughout three-fourths of the territory nearly all of the

wells are Berea wells; that the Big Lime is important only at the east end; that most of these wells are shut in, due to being too far from gathering lines; that since the witness made up the map a number of wells have been drilled in, mostly by the Columbia Company, and that from the number of wells that have been drilled in it looks like somebody thinks pretty well of the territory, referring more particularly to that in the circle, numeral "65"; that the greater bulk of the territory extends to the east; that the area shown on map sheet No. 3 in the area 65 and 66 is [fol. 336] given a different designation, but it is an extension of the same area about which the witness has been testifying; that in that territory there are about 9 dry holes and 25 producing wells over an area averaging about 4 miles wide and 8 miles long; that he does not consider that the area within the blue lines marked with numerals 65, 66 and 67 have a gas content equal in quantity or quality with that all over the Clendenin pool or the other proven areas, and that he has given effect to that judgment by only calculating 4 million feet per pound of rock pressure as against 7 million in the Clendenin area; that the reason he included the area within the circle numeral "38" on sheet 2 as probable territory is that it contained at the time he did the work quite a number of gas wells and also quite a number of dry holes; that he has included it within the gas reserves and has estimated it at 1.3 billion cubic feet; that he used a 75 per cent. discount in that case, which is a very large discount, and that this was because there were a large number of dry holes, and that it lies close to an oil field, and further that it lies on the west and north of an area that has been proven worthless; that the way he arrived at that is that he has mapped the territory which he considered proven for oil and gas and probable for oil and gas, [fol. 337] and then when an area is reached that has been mapped as probable for oil or gas, or possibly both, the figure is reduced to the extent to which he considers it probable for gas; that he has done the same thing with regard to the area in blue bearing the numeral "211," but that is a territory which, if it is probable for anything, is probable for gas; that there is no oil in its proximity; that while there are dry holes bordering to some extent the proven field the general trend here, not only of the structure but also of

the pool, the Spencer pool, he thinks justifies in this case that where there is a gas field that can be followed 15 miles, it is reasonable to believe it to extend another 2 miles, and that the dry holes indicated do not necessarily mean that all of the adjoining territory is dry; that he does not think that the same structure that exists there is the structure that exists in the so-called Branchland field; that it may not be an entirely different formation, and that when he ran into the dry holes to the east of the pool indicated he concluded that that was the end of the pool; that the pool indicated is skirted on the southwestern part with 3 dry holes, and extending northward with 3 dry holes, and then further west about two miles a vertical line of 5 dry holes, but that not-[fol. 338] withstanding these two sets of dry holes out beyond that field there is a probable or producing area; that as to some of the dry holes they are in all likelihood a local condition; that in making the statement in regard to the wells in the Branchland pool he was in error in stating that they were in the Bera sand largely; that he intended the Injun sand instead; that is, the pool lying to the northeast of the Branchland pool and having as its approximate center the number "55" within a circle; that there are only a few Berea wells in the eastern portion thereof; that the approximate area of the Branchland field is in the neighborhood of 50 square miles; that his reason for including as probable territory the section lying between the Branchland field and the field northeast which appears on sheet No. 4, and in the center of which appears the numeral "55" is that there were at the time the map was prepared two dry holes; that there were at that time a number of producing gas wells; he cannot distinguish between those that were there October 1st, 1922, and those that were there December 31, 1923, but that the territory would at the present time be considered as largely proven; that at the time the map was prepared there were not so many wells as at this time, and it was considered as probable; that from the fact that you [fol. 339] have the Big Injun production in the Branchland pool and along the eastern edge wells producing gas from both the Berea and Injun sands, you would judge it likely that production would be obtained in the area to the east from the Berea and possibly also from the Injun; that we know the Injun does not extend to the proven area previ-

ously referred to being in the east; it ends somewhere between the Branchland pool and the other pool; the Berea, however, apparently extends across that distance; that the reserve estimated by him for the so-called probable territory lying between the Branchland pool and the pool lying to the east was 1.1 square miles, or about 2½ billion feet.

That rock pressure is a term used to designate the pressure existing in a gas sand, and is measured in pounds above atmospheric pressure; it is the pressure of the gas; that there are fields in which the pressure of the water is a very notable factor; that the outstanding example of such a field is the Mexican oil fields; that there the pressure of the water against the oil body is the force that causes that oil to flow with the great volume that it does; that in the Appalachian gas fields and oil fields there is a very different condition; that the gas sands in this eastern [fol. 340] territory are to a large extent water-dry; that the way this is known is on account of the position of the oil pools; the oil lies down the structure, and in some cases actually at the bottom of the structure, what is called the syncline, and in other cases lying partway down the structure, and prevented from going further down on account of the water in the sand below that point; that the gas fields owned by the United Fuel Gas Company are to a very large extent water-dry; that this is true throughout the entire Appalachian field; that the deeper sands are generally water-dry; that in the sands near the surface they carry water; that when the gas is taken out of the pool the rock pressure goes down and gas expands, and as the place formerly occupied by a particular billion feet under a pressure of 500 pounds is withdrawn it is occupied by a billion feet under a pressure of say 200 pounds; that when the gas is finally all withdrawn the sand is not filled with water in this field; that he has studied the Branchland field, and that there is possibly more water in the Branchland field than in other fields; that the Triple-State field has considerable water but the Branchland field has more water than we find in the Clendenin or Kanawha fields; that within the area of the Clendenin field the water [fol. 341] is negligible.

That in addition to the methods indicated heretofore by the witness for determining the amount of gas, to wit, the

application of Boyle's law and the decline curve, there is another method commonly referred to as the porosity method, which is a convenient method in making a determination of the possible or probable reserves of a new field; that when a field is new and there is but little information available regarding the production of gas per pound of loss in pressure, and so forth, it is convenient to form some idea of the probabilities of the field by making use of this method, called the porosity method; that the method is merely this: the extent to which the territory is underlaid by the gas sand is estimated, either from the position of wells that have been drilled or from the structure of the territory, or from both; the thickness of the sand is estimated, either from thickness as determined from those holes which have been drilled or from outcrops, if any occur within a reasonable distance, and the porosity of the sand is estimated—that is, the porosity of the gas bearing sand; that that is taken usually by examination of bits of rock taken from the cuttings, if possible, but if that is not [fol. 342] feasible then either by referring to the porosity where the sandstone is known to outcrop, if that is within a reasonable distance; and if information regarding the porosity is not available from either of these two sources, then an engineer would have recourse to the average porosity of sandstones; that the porosity of various kinds of rock has been studied and tabulated, and one would not be going widely astray by assuming an average; that another factor necessary in applying this method is the rock pressure as determined in whatever holes have been drilled; that the quantity of gas in a given porous sand would of course vary with the pressure. Now, so far as the weakness of the theory is concerned, or its application, it is rather a difficult matter to estimate with any degree of accuracy the thickness of a pay sand from the meager information that would be obtained from a few wells in a new field. That is the principal weakness; that it is always more difficult to estimate the gas reserve of a field if it is a brand new one and the data meager, but if the witness went into a new field he would endeavor to apply one or the other of the methods used by him described above, rather than the porosity method, and would have recourse to the porosity method only as a last resort.

[fol. 343] In answer to a question as to the weakness in the application of Boyle's law used by the witness, he made the following answer.

The Boyle's Law method is properly applicable only in a field where the water encroachment is not a matter of serious importance. In the fields that we are considering here, water encroachment is not of any importance, as can be easily shown, and, therefore, the factor which sometimes makes the Boyle's Law method inapplicable does not have that effect here. Another point that is of consequence, more from a theoretical than from a practical standpoint, is the fact that natural gas is slightly more compressible at high pressures than at low pressures. In the application of Boyle's Law to the problems at hand we have ignored this matter. It would have but very slight effect on the answer were we to take it into account. A third factor that might be considered as of some importance is the fact rather generally recognized that there is a somewhat larger production of gas per pound loss in pressure after a field has been drawn upon for a considerable time than during the early period of production. The reason for that may be that gas will travel toward an area in which the pressure has been reduced, from a long distance, and if we were [fol. 344] to take this into account we would predict for the future of a gas field a somewhat greater gas production per pound loss in pressure than has been obtained in the past. We have ignored this factor in the present work. Another factor that must be taken into account and which requires at least some judgment is to determine at what final pressure the field will be abandoned; whether the final pressure will be atmospheric pressure or something above that or of course if vacuum pumps have been used for a long time in the final stages of extraction of gas or even below that. In handling the proposition before us, we have assumed that the gas would be extracted on an average to atmospheric pressure and have considered this a fair determination because we have not taken into account the rather well-known fact that we will get somewhat more gas per pound loss in pressure during the final stages of gas withdrawal. So far as I know, I have given you the difficulties that are met in the application of this method.

That he has made an estimate of 663 billion cubic feet as the reserve gas under the areas owned and controlled

by the United Fuel Gas Company; that in his judgment this is a fair estimate, rather conservative; that he thinks it will be found that there is gas in territory which he has [fol. 345] not included in the proven and probable territory upon which the above estimate is based; that this estimate of 663 billion cubic feet is the amount which he estimates as recoverable, and that will be recovered; that if he were attempting to estimate the total quantity of gas he would take into account what will undoubtedly remain in the sand after atmospheric pressure has been reached, and that would be a considerable quantity of gas, which the witness has ignored in his calculation, and in addition to this that he would also take into consideration the line loss; that what he means by the estimate given by him is the amount of gas that is actually recoverable; that assuming his estimate to be correct, you add to that the total past production of United Fuel Gas Company, which would indicate that the territory from the time it was first acquired down to the time the last gas was taken out would yield a total recoverable gas quantity somewhat in excess of a thousand billion cubic feet, and that approximately 40 per cent of that gas has already been recovered and found its market, and a comparison of the productive history of United Fuel Gas Company with the similar history of old gas companies will show that this company, which has only recently reached [fol. 346] approximately its maximum output of gas, may fairly be considered to have produced less than one half of its ultimate quantity.

That in order to determine where the water which is encountered comes from you would have to consider the particular field in which it occurred and might have to consider even the particular well; that generally most of the water trouble is from the water of the upper formations which finds its way down the drill hole, because either the casing may leak or the packer may not be tight, and the water gets into the well from that source rather than from the producing sands; that in his opinion there is really very little water accumulated at the bottom of a well if the bottom of that well be within the sand body that is producing gas; that there is very little accumulated from the pay sand; there might be a disagreement of two men as to the source of the water, but witness thinks that most of it

comes down the hole; that the old wells of the United Fuel Gas Company are pumped for water and that the water is found in the older wells rather than in the newer ones, and that he thinks this seeps in from above.

That the red circles upon the map which are given no particular designation indicate a gas well owned by some [fol. 347] operator other than the United Fuel, for which there is no designating number.

That he has not inquired in detail, but has in a general way, into the leases held by the United Fuel Company and the terms thereof; that the company has made a classification of drilled acreage, and this classification is in the witness's report; that in this report the number of acres that the company carries on its books as drilled acreage was 70,000 at the end of 1923; that the way they arrive at this drilled acreage is that they take the aggregate of the acres of the farms drilled, and this makes the total of drilled acreage, except that in cases of large farms, say 500 acres, upon which only one well is drilled, only 100 acres is considered as drilled territory, but if it was a small farm of say 20 acres the whole of it is considered as drilled territory; that he does not know how many farms are within the proven areas that are not drilled; that in his estimate of 663 billion cubic feet of gas recoverable from the territory he would expect, as time passes, the acreage would be tested or the results observed from tests made by others, and when acreage is found by testing to result unfavorably it would be abandoned; that he has already made an allowance of 38 [fol. 348] per cent to cover any such unfavorable results in the probable territory; that he has no idea of the number of farms included in the proven territory, either of the number drilled or not drilled; that he considers about 135,000 or 136,000 acres proven, of which 70,000 acres is classed as operated, from which it would appear that about one-half of the proven territory has been drilled; that if the United Fuel Gas Company should allow its leases to lapse by failure to drill or should surrender them or should be unable to renew them when they expire to the extent that they cover territory which he has classed as proven or probable, it would reduce the estimates, and that in his estimates he assumed that the company will keep alive, either by drilling a well or negotiating a renewal of the leases in-

cluded in the acreage embraced therein; that he mapped out a drilling program for the purpose of a valuation report heretofore made by him.

That since 1921 he has made a study of 215 wells that have been drilled by the United Fuel Company or by foreign companies in and around the territory that is owned by the United Fuel Gas Company; that so far as he is informed there has been no sale of leases by the United Fuel [fol. 349] Company to other companies except the sale of oil rights which have been made to a subsidiary or associate company; so far as the gas rights are concerned he is not informed of any sales that have been made; that in making an estimate previously he did not determine the number of acres of proven territory; that he was dealing simply at that time with proven territory, practically with the same acreage as a whole as he has classed in this report as proven territory; that the maps which he now has were not at that time prepared and he did not have any figures as to how many acres that represented; that he does not believe that the proven area has changed to any material extent since; that if he testified that there was 100,000 to 150,000 acres embraced in his estimates it reveals that he had in his mind the same extent of territory which he considered at that time proven and he considered proven when he completed the more detailed work; that he had not progressed sufficiently at that time to classify the remainder or to make an estimate as to the remainder of the territory; that he remembers that at the time he gave the information to the commission Mr. Wallace made the statement that in his judgment the company had twice as much gas as was revealed in his estimate, which statement was made to him, [fol. 350] and not to the commission; that since the last hearing in the last case before the commission he has made a study of the acreage called probable, and after making due allowance for contingencies in his judgment it contains 414 billion cubic feet.

That in addition to the elements taken into consideration mentioned by the witness heretofore in applying the porosity method, also in some fields where the temperature of the gas sands is very high that factor is taken into account; that it is also taken into account in the application of Boyle's law; that Boyle's law, accurately stated, would be that at the same

temperature a given quantity of gas will occupy a volume inversely proportional to the pressure; that is, from the correct scientific standpoint, but from the practical standpoint of applying Boyle's law to gas reserves it is not necessary to make any revision of the figures to take care of temperature. We are dealing with this question, How much gas has been produced and how much rock pressure has been lost in that production? We find the answer to that, and knowing the remaining rock pressure, we assume that in the future we will get about the same production per pound loss of pressure. That about two or three years ago the witness was sent into the Monroe gas field and asked to [fol. 351] estimate the probable reserves of that field; that he found a publication of the United States Government in which their engineers had made an estimate of the gas reserve, using the porosity method; that after going around the field, and while considering what would be the method most proper to use, he considered that were he to use the porosity method he would get a result that he couldn't depend upon, that were he to use the rock pressure method he would likewise be getting pretty far from a fair result, due largely to the salt water present in that field, and that as a result of these facts he used a method which he hadn't yet described, which gave a considerably lower result, and which method is that he took the gas that had been produced in northern Louisiana from some half dozen old gas fields, some of them producing gas from the same sand as the Monroe field; he found what the area of the production had been, the thickness of the producing sand, the initial rock pressure, the present rock pressure, and the total past production of each of the old wells and its probable future, which was more easily determined than this new field, and from that came to the conclusion that after taking into account the production and particular rock pressure of the [fol. 352] Monroe field and its area and its sand he could apply this information obtained from these neighboring fields, which would give a pretty fair line on what to expect from the Monroe field; in other words, he judged the particular gas body by its nearest neighbor; that he doesn't know whether this method was ever applied before; that he has applied no other methods of determining gas reserves of the United Fuel but the ones indicated by him above; that the United Fuel Gas Company keeps a record of all wells drilled

in its territory, whether foreign or its own wells, which record gives the location of the wells, the elevation of the top of the wells, the depth of the well, the depth of the producing sand, the name and the initial open flow, and that information has been the principal information used.

Redirect examination:

On redirect examination the witness stated that he has made inquiry and examination as to wells drilled in the pool included in the territory east of the Clendenin pool as probable territory, about which he was cross-examined, and that he finds that there have been ten wells drilled in the territory east of what he classed as proven territory since he made the classification, of which ten wells eight were drilled [fol. 353] in what he classified as probable and two beyond the probable in what he classified as unfavorable, in other words, in wild-cat territory; that of the ten wells three are oil wells and seven are gas wells; that of the two drilled in what he classed unfavorable territory each is a producing gas well.

Recross-examination:

That on a former hearing he testified that 215 wells had been drilled by the United Fuel Gas Company and by other operators in the field or territory which he considered as probable territory; that to make the record a little more complete concerning the wells which have been drilled since the map was drawn he has made a statement showing the total number of wells that have been drilled during 1922 and 1923 in this territory by the United Fuel Gas Company and other operators; that the maps as original prepared were dated October 1st, 1922; that those maps represented the territory as it existed December 31, 1921; that some time during the present year, 1924, he undertook to bring the maps down to the first day of January, 1924, by placing thereon all of the wells drilled during 1922 and 1923, but that he made no revision of the territory classed as proven, probable or wild-cat; that classification remained as origi- [fol. 354] nally shown; that the total number of wells drilled during the two years 1922 and 1923 is 423; that of these the United Fuel Gas Company drilled 97, other operators 326; that the United Fuel Gas Company obtained 84 gas wells, 9

oil wells and 4 dry holes, and other operators obtained 275 gas wells, 17 oil wells and 34 dry holes; that this is the information kept, so far as there is such a record, in the office of the United Fuel Gas Company; that of the 97 wells which the United Fuel Gas Company drilled 77 were drilled in territory mapped as proven, and all were producing wells; 18 were drilled in territory considered as probable, of which 16 were producing wells and 2 were dry holes; two were drilled in territory considered as wild-cat and both were dry holes; that the result of the drilling in 1922 and 1923 did not influence him to change the classification of the territory; that had he changed the classification it would have caused him to class as proven some portion of the territory previously classed as probable, and to class as probable some territory previously classed as wild-cat, and to a very minor extent class as wild-cat a small amount of territory which had been mapped as probable; that there was drilling done by other operators in what he classed wild-cat territory that would [fol. 355] place it in the class of proven territory, but none by the United Fuel Gas Company; that of the 326 wells drilled by other operators 78 were drilled in territory which he considered as proven. Of these 77 were producing wells and one was a dry hole. One hundred and ninety-seven were drilled in territory considered as probable, and of these 174 were producers and 23 were dry holes. That some of the wells drilled by foreign operators were in the Branchland field. That while the drilling in the Branchland field would not reflect the value of the United Fuel acreage, it does have a bearing upon the question of the classification of the territory; that it indicates to what extent that classification has, during two years, been justified or not. Other operators drilled 51 wells in territory which he classed as wild-cat territory; that of these wells 41 are producers, 10 are dry holes; that most of these wells are located in the areas classed as wild-cat, but very close to the border of areas which are mapped as proven or probable; that most of these 41 wells are reported as small wells; that this drilling has not changed his judgment as to the classification of the company's territory as of December 31, 1923; that he finds that there were drilled in area 213 shown on the map since De- [fol. 356] cember 31, 1921, 13 wells, which he has had indicated on the map, 4 of which were drilled in territory that

he classed as wild-cat and 9 in probable acreage, and some of which were drilled in 1924; so that they are not in any of the tables presented by the witness; that one of the wells is located about three-quarters of a mile to the north of the northern boundary of the ink line drawn across the map; that it is a gas well, completed in the last two or three weeks, and produces about 250,000 cubic feet of gas from the Injun sand; that whether it will be a profitable well depends upon what gas sells for; that while a well producing that amount of gas is considered a small well, yet the wells in the Injun sand have a very long life and should be producing gas for many years.

That in regard to area 211, just to the west of the Clendenin field, during 1922 and 1923 new wells were drilled in this area; during 1924 ten wells have been drilled in that area, and there are at present, as he is informed, several locations made for additional wells; that the gas here is obtained from the Injun sand; that the wells are large wells, averaging about one and a half million feet initial open flow; that these wells lie within an area that extends in a [fol. 357] southerly direction about two miles from foreign well 1504, and they extend over an area that would add to the proven portion of that pool not less than three square miles.

(The witness further testified, in open court, as follows:)

In explanation of Exhibit Z, heretofore filed with his testimony, the witness stated that in making the computation he took into consideration the fact that the gas could not all be marketed at once, but would have to be marketed over a series of years, and discounted the figures on that account, and that this discount was shown and applied in table No. 5; that the valuation shown by this report is based on the proposition that the United Fuel Gas Company will, for a number of years, be able to market gas both from its own property and from properties where it may purchase gas; that the total quantity of gas assumed as available from its own properties is well within the amount indicated in his study of its acreage, and the amount postulated as available through gas purchased is well within the bounds of a reasonable judgment based upon its past history in the matter of the purchase of gas; that the reason for including the gas

purchased is that he might bring together a cost figure [fol. 358] which takes into account two things, the cost that the company must meet in producing gas and the cost which it must meet in purchasing gas; that if it does not purchase it will have to produce, and the two figures will probably be about alike, but he brought them together to accord with the facts as near as he was able to judge, based upon past experience; that he assumed a market in Pittsburgh for industrial gas based upon the fact that gas is at the present time being sold at steel mills in and around Pittsburgh at various prices, 35 cents being about the average price; that the lowest price he has known during the past year was 32½ cents for gas available during the summer months only; that it is worth more if the company can deliver it the year round; that the Allegheny Steel Company is paying 35 cents for gas the year round at the present time, so that he assumed that the Pittsburgh market will absorb very large quantities of gas and all of the gas that this company might send there, if it could sell it for 35 cents; that he outlined the probable cost for the future based on past experience of drilling the undrilled acreage and the probable cost in the future of producing gas; that in this production cost he took into account the upward trend of costs, what is shown by past experience, and pro- [fol. 359] jected that into the future; that he assigned no increase in the value of gas at Pittsburgh above this 35 cent level, although he believes that it will advance above that, but that that is a matter that the future will determine; that after finding what the income should be from a proposition of this kind and what the expense should be, he found the expectant profits of each year and reduced that to present worth by applying a discount factor based upon an 8 per cent value of money.

Azel Meadows testified in substance and effect as follows:

That he lives at Huntington, West Virginia, and is a real estate operator and has been engaged in that business for something over ten years, and is acquainted with the value of real estate in the city of Huntington and has had such

acquaintance for fifteen years; that he is chairman of the appraisal committee of the Huntington Real Estate Board, the functions of which committee are to make appraisals of real estate for inheritance tax purposes and different tax purposes for insurance companies and for any other purpose desired; that he assisted in making an appraisal of certain real estate for the United Fuel Gas Company [fol. 360] in the city of Huntington; that the said appraisal was made about the 7th of March 1924; that he is familiar with the real estate appraised and with the value thereof, and that the values fixed for the said real estate as shown by said appraisal are in the opinion of the witness the fair value thereof at the time of the said appraisal and at the present time. The said appraisal in writing, signed by the witness and by Mr. Dunfee and Mr. Varnum, who assisted in the appraisal, is filed as part of his testimony marked Exhibit Meadows No. 1, and is attached hereto as part hereof.

Cross-examination:

That he made a personal examination of the real estate at the time the appraisal was made; that Mr. Dunfee and Mr. Varnum were with him; that the report was made to the Huntington Real Estate Board, and that he was acting for the Real Estate Board in making the appraisal.

H. O. Dunfee testified in substance and effect as follows:

That he lives in the city of Huntington and has lived there for twenty years; that he is a real estate operator and has been engaged in that business for about eight years and is fairly well acquainted with real estate values in the [fol. 361] city of Huntington and has been for the past eight years, during which time he has dealt daily in real estate; that he is a member of the Huntington Real Estate Board and of the appraisal committee thereof, whose function it is to appraise the value of real estate for inheritance and loan purposes and other purposes; that he assisted Mr. Meadows and Mr. Varnum in making an appraisal of some real estate for the United Fuel Gas Company; that the result of that appraisal was reduced to writing and signed

by himself and Mr. Meadows and Mr. Varnum, and is filed with the testimony of Mr. Meadows as Exhibit Meadows No. 1, and that the values shown by said report are in his opinion fair values for said real estate.

Cross-examination:

That the said report when made up by the appraisers was taken to the Real Estate Board and brought before the board at one of the weekly luncheons and was read and approved; that there was some discussion on this particular occasion; that he does not recall who was present, but he knows that he was there.

[fol. 362] C. R. Varnum testified in substance and effect as follows:

That he lives in the city of Huntington, West Virginia, and has lived there since 1902; that he is engaged in the real estate business and has been actively in it for the last eight years, during which time he has sold real estate to a considerable extent in the city of Huntington; that he is acquainted with real estate values in that city and has been since 1904 or 1906; that he is connected with the Huntington Real Estate Board, and assisted in making an appraisal of some property for the United Fuel Gas Company with Mr. Meadows and Mr. Dunfee, and that the appraisal signed by himself and Messrs. Dunfee and Meadows and filed as Exhibit Meadows No. 1 represents his judgment as to fair value of said real estate.

(No cross-examination.)

D. E. Goon testified in substance and effect as follows:

That he lives in the city of Charleston, West Virginia, and has lived there since 1907, and is engaged in the real estate business and has been in that business for approximately ten years; that his experience therein has been in [fol. 363] the city of Charleston, during which time he has been principally selling real estate for other people, but buying and selling some on his own account; that he

is acquainted with the values of real estate in said city; that he is a member of the Charleston Real Estate Board, and that one of the functions of this board is to appraise property for government reports, banks, insurance companies and any other purpose for which a value on property might be desired; that he knows the property owned by the United Fuel Gas Company at the corner of Quarrier and Dunbar streets in said city and is acquainted with the value of it; that he made an appraisal of said value together with Mr. Palmer and Mr. Henderson of the said real estate board, which was made about the middle of March 1924; that the result of said appraisal was incorporated by himself, Mr. Palmer and Mr. Henderson in a report, signed by Charleston Real Estate Board by E. Steen, vice-president, and Hugh W. May, secretary, and that the said report represents his judgment as to the value of said property.

(Said report is filed as a part of his testimony, marked Exhibit Good No. 1, and is attached hereto as part hereof.)

That he is acquainted with another piece of property owned by the United Fuel Gas Company situate on the [fol. 364] south side of Virginia Street, West, being a lot 40 by 150 feet, and being numbered 131; that at the same time he made an appraisal with the above named gentlemen of said property, and that the report of said appraisal, signed by E. Steen, vice-president, and Hugh W. May, secretary, contains his judgment as to the fair value of said property, which report is filed as part of his evidence marked Exhibit Good No. 2, and is attached hereto as part hereof.

(No cross examination.)

E. A. Palmer testified in substance and effect as follows:

That he is a resident of the city of Charleston, West Virginia, and is engaged in merchandising and buying and selling real estate, and has been engaged in the business of buying and selling real estate nearly thirty years, for himself exclusively; that he is acquainted with the values of real estate in the city of Charleston, and that he, to-

gether with Mr. Good and Mr. Henderson, made an appraisal of two certain pieces of real estate owned by the United Fuel Gas Company referred to in two reports of said appraisals filed with the testimony of Mr. Good taken [fol. 365] herein as D. E. Good No. 1 and D. E. Good No. 2, and that he believes that the values fixed for said real estate in said reports are the fair value thereof.

(No cross examination.)

N. R. Henderson testified in substance and effect as follows:

That he lives in Charleston, West Virginia, and has lived there for four years and is engaged in the real estate business and has been so engaged for about two years; that he is acquainted with the values of real estate in the city of Charleston, and assisted in making the appraisal of certain real estate owned by the United Fuel Gas Company, as shown by reports of said appraisals filed with the testimony of D. E. Good as D. E. Good Exhibit No. 1 and D. E. Good Exhibit No. 2, and that the values shown for said real estate by said reports are in his judgment the fair values thereof.

(No cross examination.)

[fol. 366] T. O. Sullivan testified in substance and effect as follows:

That he lives in the city of Pittsburgh, Pennsylvania, and has lived there continuously for about eighteen years; that he is engaged in the natural gas and oil business, and is connected with the Hope Natural Gas Company and the Hope Construction & Refining Company particularly; that he is the vice-president and general manager of the Hope Natural Gas Company and has had that connection with that company since 1918; that he has been engaged in the gas business since 1886 with a number of different companies; that just prior to his connection with the Hope Natural Gas Company he was general manager of the

Manufacturers Light & Heat Company, a company operating in the states of Ohio, Pennsylvania and West Virginia; that prior to that time he was general manager and superintendent of the Peoples Natural Gas Company, operating in the state of Pennsylvania, and for years during that time he was connected with different companies in the states of New York, Ohio, Kentucky, Pennsylvania and West Virginia; that the last five years he has been general mnaager of the Hope Natural Gas Company; that the Hope Natural Gas Company is engaged almost exclusively in [fol. 367] the natural gas business; it occasionally gets an oil well in its operations and of course operates it; that its operations are carried on in the northern part of West Virginia in the counties of Monongalia, Wetzel, Wood, Ritchie, Calhoun, Gilmer, Braxton and several other counties—practically all of the counties where there are natural gas operations north of Calhoun and Roane counties—and we also operate in Roane county, West Virginia; that the Manufacturers Light & Heat Company, with whom he was connected prior to his connection with the Hope Company, also operates in West Virginia and does still; that during the time he was connected with it its operations in West Virginia were considerable, having in the neighborhood of 200 or 300 wells in the state of West Virginia and owning three blocks of gas territory, something in the neighborhood of between 100,000 and 200,000 acres of such territory, in practically the same counties, or part of the counties, that the Hope Natural Gas Company is operating in; that his connection with the Peoples Natural Gas Company was for four or five years; that its operations, so far as the production of gas is concerned, were in the state of Pennsylvania, in that part thereof close to the West Virginia state line, in Greene county, Pennsylvania; that the [fol. 368] only connection of the Hope Natural Gas Company, of which he is now vice-president and general manager, with the United Fuel Gas Company is a contract for the purchase of gas; it has no interest in the property of the United Fuel Company; that he is acquainted in a general way with the gas fields in the state of West Virginia; that as vice-president and general manager of the Hope Natural Gas Company it is his business to keep informed as to general operations in gas territory not only in West

Virginia but in other states, and that he tries to get all that information he can, and believes that he is fairly well posted in regard to the territory in West Virginia, and that he is acquainted in a general way with the gas territory owned and controlled by the United Fuel Gas Company in West Virginia and Kentucky; that the said territory lies principally in Roane, Jackson and Kanawha counties, West Virginia, and counties south of those counties, and from all the geological data he has seen it is very well located; that it lies along the general trend of the gas development and along the anticline formations which have been determined to exist through that territory; that it has produced a large quantity of gas in the last ten years, as shown by the records of the company, its production in the last [fol. 369] year being approximately 37 billion cubic feet of gas; that from an operating standpoint the territory is very well located; that he has examined the record of the production of gas from said territory and the extent to which it has been drilled and tested; that he knows the extent of the acreage included in the territory of the United Fuel Gas Company; that from the examination he has made of the records of production, his information as to the number of wells drilled and the production of each well, his knowledge of the geological formation and all the other elements that go to make a valuable gas territory or otherwise he is able to give an opinion as to the value of the gas reserves of the gas territory owned and controlled by the United Fuel Gas Company for natural gas purposes alone, and that in his opinion the value of the gas reserves for natural gas purposes alone of United Fuel Gas Company is in round figures $34,000,000.00; that that is what he considers a prudent purchaser who desired to buy the property ought to be willing to pay to a willing seller therefor; that he is acquainted with the location on the property of the various wells that have been drilled, as shown on the maps of the company, and that from his experience as an operator of gas companies the operations carried on upon said [fol. 370] land have been very wisely conducted in order to develop the property to the greatest extent with the fewest number of wells; that he has operated gas properties under substantially the same conditions as exist in the case of the United Fuel Gas Company property and has

been conducting such operations for twenty years; that in his opinion very good judgment has been exercised in acquiring the tracts constituting the United Fuel Gas Company properties and in acquiring the very large acreage all joined up together; that this advantage comes from the fact that the wells drilled can be protected so that they will not be drained by other parties drilling on adjoining territory, and by having this large acreage all joined up the number of wells drilled would be less and it would be easier to conduct the operations on that account, rather than frequent moving and securing privileges over territory not leased or owned by the company; that in fixing the value given by him as aforesaid he did not give consideration to any part of the plant of the company other than the gas territory itself, and this valuation is his judgment as to the worth of said territory as it exists today, and that in fixing said value he has considered the amount of money [fol. 371] that has been spent for that territory and the amount thereof that has been exhausted; that he has been at a number of different times consulted and advised with by the other officers of the Hope Natural Gas Company as to the proper price to be paid for gas territory, and that in making such purchases or in selling gas territory people who advise with him rely upon such advice; that the Hope Natural Gas Company relies upon the advice given by him in this regard to some extent; that Mr. John B. Corrin, the vice-president of the company, who has had a very large experience in gas territory and has handled the land department of the Hope Natural Gas Company for a number of years, usually passes on the territory himself without consulting him, but at times they consult together about it if there is any question that Mr. Corrin is not entirely satisfied with.

That in fixing the value which he did on the gas reserves of the United Fuel Gas Company he has in view a free market in which the price received for the gas would not be affected by public service rates; that he had in mind such market in the states of Ohio and Pennsylvania through gas lines which are already installed and some of which are already connected; that he believes there is a sufficiently large market through pipe lines easily reached to market all [fol. 372] of the production of the United Fuel Gas Com-

pany if it could be secured for that market; that he did not consider in fixing said value any value that said gas might have on account of the gasoline that might be extracted therefrom; that if it should develop that it has any value for that purpose this would increase his estimate to that extent; that in fixing his value upon the gas reserves of United Fuel Gas Company he made quite an extensive and exhaustive study of the property of the company; that he took into consideration the number of wells that were producing gas from each of the different producing sands in the various fields; for instance, in what is known as the Clendenin field there were eleven wells producing gas from the Injun and Squaw sands, and in 1923 there were twenty wells; that he considered in the case of this sand the rock pressure in 1913 and the rock pressure in 1923, the decline between these two dates, the amount of gas produced from this sand over that period, and took each producing sand in the same way, for instance, the Weir sand, he had the same data on that, and the total amount of gas that property produced in the Spencer pool; he considered the same items from the producing sands; then he had information as to the acreage held under lease and the acreage held in [fol. 373] fee in the various different sections, the number of wells drilled on that acreage, the total amount of gas which the company has produced from the same territory and sold during the last ten years, the selection of the acreage with reference to the possibility of marketing the gas, the marketing the gas in Pennsylvania and Ohio, the general demand for gas in those states, and after considering all these varying different items he arrived at the value which he gave for the gas territory.

That he is acquainted with the producing and distribution plant of the United Fuel Gas Company in a general way; that assuming that plant to be worth $25,000,000.00 he would say that a company would not be justified in making the investment that has been made in that plant without a large reserve gas acreage, and that the reserve acreage that the company has is not any too much; it is not large enough if other desirable acreage could be secured; that the Hope Natural Gas Company purchases gas from other producers in the field at the well and pays therefor different prices, ranging from 10½ cents to possibly 14 or 16 cents, all in

West Virginia; that the difference in price is determined by whether the producer delivers the gas to the lines of [fol. 374] the Hope company or it lays a line to the point of production.

(No cross-examination.)

(The defendants object to the testimony of the foregoing witness as to the value of the plaintiff's gas rights upon the ground that he has not shown that he is competent to express an opinion thereon.)

JOHN B. COMBS testified in substance and effect as follows:

That he lives in Pittsburgh, Pennsylvania, and is engaged in the natural gas and oil business; that for the last twenty-two years he has been engaged in the natural gas business and for twelve years prior to that time in the oil business; that at this time he is actively engaged in the work of management of a number of gas companies, among which are the Hope Natural Gas Company, the Reserve Gas Company, the River Gas Company, the Connecting Gas Company, the Hope Construction & Refining Company, and the Marion Oil Company; that he is assistant manager and vice-president of the Hope Natural Gas Company and has been assistant manager for fifteen years and vice-president for probably twelve years; that as such assistant manager [fol. 375] and vice-president he has charge of the land department of the company, including the acquiring and surrendering of territory and the drilling of wells; that he passes on the questions involved in the purchase and acquiring of new territory, surrendering old territory and developing the territory owned by the company, and he has been doing that ever since he has been assistant manager and even before that time he was in charge of the land department of the company and did practically the same work; that this antedated his services as assistant manager some six or seven years.

That the Hope Natural Gas Company has approximately 900,000 acres of territory and approximately 3,100 live wells, and sells approximately 56 billion cubic feet of gas a

year; that during the last fifteen years the amount of acreage held has changed; that at times it has held up 1¼ million acres, but the amount of acreage held from time to time keeps changing, it being a question of elimination and acquiring more acreage all the time; that the number of wells in operation is not so large at the present time as it has been at times in the past; in other words, there have been more wells abandoned than have been drilled; that the [fol. 376] Hope Natural Gas Company operates entirely in West Virginia and north of the center of the state; it takes in all the gas producing counties from Brooke county south to Roane county, and includes every gas producing county north of Roane county and some that are not producing; that the operations are conducted in some twenty counties of the state; that since he has been with the company its development has been continuous and very active.

That he is also connected with the Reserve Gas Company and has been connected with that company as manager for probably five years, prior to which time he looked after its properties and operations in the land department; that his duties with the Reserve Gas Company are to a great extent the same as with the Hope Natural Gas Company, except that he is not so actively connected with it, for the reason that it has a certain number of acres and it remains substantially the same today as when it started; that in recent years he has had the active charge of its territory; that prior to five or six years ago Mr. John G. Pugh was manager of the Reserve company, and he consulted with the said Pugh, but that since that time he has had full charge of it himself; he has also had charge of the operations and production of the said company for the last five years; that [fol. 377] the said Reserve Gas Company operates in Harrison and Lewis counties, West Virginia; that he has been vice-president and general manager of the River Gas Company for five or six years, prior to which time he looked after their leases and operations in the land department; that it is an Ohio company and does not operate in West Virginia; that he performs the same duties for it that he does for the Hope Natural Gas Company; that he has practically the same connection with the Connecting Gas Company that he has with the Reserve Gas Company; that the Connecting Gas Company is a pipe line company and hasn't

anything to do with the production of gas; that he has been connected with the Marion Oil Company for five or six years; that it is not an active company and is practically entirely an oil company; that his connection with the Hope Natural Gas Company goes back twenty-two years, and that his connection with the other companies mentioned by him has been during that twenty-two years; that during that time he has been exclusively connected with the Hope Natural Gas Company and the other companies mentioned by him, and that prior to his connection with the Hope Natural Gas Company he was connected with the South Penn Oil Company and had general charge of the land department of its gas department for about five years prior [fol. 378] to his connection with the Hope Natural Gas Company; that he has been connected with the natural gas business, and particularly with the selection of the territory to be used, for the last twenty-seven years; that prior to that time he was engaged in the land department as clerk, roustabout, and so forth, but his active duties in connection with the selection of territory and the acquisition of the same commenced twenty-seven years ago and has been continuous ever since.

That he is acquainted to a great extent with the properties of the United Fuel Gas Company; that a great deal of the territory of the United Fuel Gas Company was formerly held by the Hope Natural Gas Company and was transferred to the United Fuel Gas Company, and from his knowledge of the territory acquired in handling the leases and operations and from the study he has made of it since that he is acquainted with that territory; that he has such information in regard thereto as would justify him in fixing the value on it for the purpose of purchasing it for his company if it desired to purchase it; that in acquiring territory his company acts upon his advice; that he knows from examination of the company's records and of the territory itself approximately the number of wells which the [fol. 379] United Fuel Gas Company has and to a great extent their relative locations; that to a limited extent he is acquainted with the sands in which the gas is produced, and in a general way is acquainted with the quantity of gas produced from each sand in the United Fuel Gas Company territory; that he knows the extent of United Fuel

Gas Company's acreage; that it is wonderfully joined up together, very, very well protected, which is a wonderful advantage, because it can be operated much more reasonably; there is not the competition by other people getting a number of leases alongside of you or adjacent to you and drilling wells and draining the territory; it saves the drilling of a great many offsetting wells, which deplete the territory very fast, and better spacing of the wells can be given by the United Fuel Gas Company than if the territory were broken up and owned by different individuals or companies; that if somebody has a farm under lease and you have a farm adjoining that you are required to offset the operations on the farm you do not have, and where one farm is surrounded by say four, that would require at least four wells on that farm to take care of the offsetting wells on the farms you do not have, whereas if you control the four farms surrounding you might develop all that gas with [fol. 380] one or two wells, or very often pay the land owner the price of a well a year instead of drilling, where, for instance, the lease on the territory is about to expire.

That to a limited extent he is acquainted with the geological formation in the territory owned by United Fuel Gas Company; that any valuation he would place thereon would be more from testing the territory than from any geological information—that is, from his actual experience;—that the territory of the United Fuel Gas Company has been sufficiently tested, in his opinion, to enable him to place a value on it; that the development already conducted upon said property has been done extremely wisely; that in his opinion the value of said gas properties of the United Fuel Gas Company simply for the purpose of natural gas, excluding any consideration of the plant which it has for production or distribution, is at least $35,000,000.00.

(The testimony of the witness as to the value of plaintiff's gas properties is objected to by the defendants on the ground that the witness has not shown himself competent to testify in regard thereto.)

That he is not so familiar with the company's Kentucky gas properties from actual experience, but he is familiar [fol. 381] with it in a small way from a study of the maps; that he would hate to put a value on the Kentucky prop-

erties because of this limited information, and that in the value of $35,000,000.00 given by him he does not include any value for the Kentucky properties, and that if they are of any value this value would be in addition to that given by him; that he is familiar with the uses to which natural gas is put by those who consume it; that it is used for domestic purposes, also for industrial purposes and commercial purposes; that in placing the valuation which he has upon the property of the United Fuel Gas Company he has considered it from the standpoint of all uses; that there would be a market for this gas aside from any domestic use thereof—that is, for industrial purposes and mills and factories in the states of Ohio and Pennsylvania, and also a certain amount for commercial purposes in New York State, and that he doesn't think there is any question but that the market in these states would absorb all of the output in addition to that already on that market, and that the gas produced by the United Fuel Gas Company could be entirely marketed, without relation to any state regulatory control or public utility commission control, and that looking at the [fol. 382] matter from that standpoint alone, and excluding the use of the gas by state regulated utilities, he still thinks the property is worth the amount given by him; that in fixing the value that he did he did not consider any value which the gas might have for the extraction of gasoline therefrom, and that if it has any value for such purposes that value should be added to the amount given by him, but that he has never given any consideration to what it might be; that by the fair value of the gas property he means that he thinks that the proven territory and the possible territory adjacent to the proven territory is worth that amount as a producing field for a gas company, considering what it could obtain for the gas, and the knowledge that he has of the operations and of the field enables him to put that value on it, excluding the wells themselves; that the gas could be sold, in his opinion, for such an amount as would give to those properties that value; that the cost of carrying the leases was not considered by him and is not an element in his estimate; that the price of gas considered by him in fixing his value upon said property was the price said gas is selling for in the market today; that the tendency in the price of natural gas in the past is that it is going up very, very much; that he knows one large company that gets 60

[fol. 383] cents a thousand for industrial gas and sells a great portion of its gas at this time for that purpose; that the gas referred to by him has been sold in Ohio, and the company is the Union Natural Gas Company; that the wells in Ohio and Pennsylvania are draining and depleting very fast, and the witness believes there is going to be a great scarcity of natural gas; that the price of 60 cents mentioned by him paid by manufacturers for gas is not lower than the domestic rate charged in that instance, but is higher, the average domestic rate charged by that company being about 51 cents and the industrial rate 60 cents; that he thinks the reason for this is that the company wants to sell most of its gas for domestic purposes and does not encourage the sale for industrial purposes, and the industrial consumer has been anxious to pay the 60 cents a thousand to get it; that in fixing the value of $35,000,000.00 on the property he considers that it is what it is worth today as a property; that of course the gas that would come out of the ground would enter into the value—it would have to—but the value today of the property is $35,000,000, and that if he bought it for $35,000,000 he would expect to get very much more than $35,000,000 worth of gas from it; that in arriving at the value of $35,000,000 he had in mind that the [fol. 384] Peoples Natural Gas Company, in the Pittsburgh district, charges 45 cents a thousand for industrial gas, and other companies about the same; that in arriving at his value he did not use any figure except his knowledge of the price of industrial gas, and he believes that the property would produce enough gas to net a buyer $35,000,000.00; that he believes the property is worth that much money and that enough gas will come out of it to net that amount; that he saw the engineers' figures as to the amount of gas which would likely come out of the property, 663 billion cubic feet, but that his valuation wasn't based entirely on that; that he is acquainted with the production and distribution plant of the United Fuel Gas Company in a general way and knows the territory it serves, and assuming that the plant cost approximately $25,000,000.00, in his judgment a company or individual would not be justified in constructing such a plant unless it had behind it at least as much reserve acreage as the United Fuel Gas Company has; that they should have this much reserve acreage or more.

(The defendants move to strike out all of the evidence of this witness on the ground that he has not shown himself competent to testify as to the value of the properties re-[fol. 385] ferred to by him or upon the questions about which he has testified.)

(In addition to the foregoing testimony of the witness John B. Corrin there was introduced upon the hearing of this case before the court of three judges the affidavit of the said John B. Corrin, which is in the words and figures following, to wit, and is inserted at this place in order that his evidence may appear consecutively.)

AFFIDAVIT OF JOHN B. CORRIN

I, John B. Corrin, being first duly sworn according to law, depose and say that I am the John B. Corrin who testified before The Public Service Commission of the State of West Virginia in Case No. 1516 in re The Investigation and Suspension of P. S. C. W. Va. No. 4 prescribing rates for natural gas to its consumers in the State of West Virginia at a hearing beginning June 30th, 1924, there testifying in part and in substance that, I was acquainted with the gas territory of the United Fuel Gas Company, that I knew from an examination of the company's records, approximately, the number of the gas wells of the United Fuel Gas Company, their location and the sands in which the gas is produced; that the gas territory of the United Fuel Gas Company had been sufficiently tested to enable me to form an opinion as to its value, and I testified to a mar-[fol. 386] ket value of at least $35,000,000.00, excluding any consideration of the plant; and that there would be a market for the gas produced in Ohio, Pennsylvania and New York.

Before testifying to such market value I, with T. O. Sullivan, another witness testifying at the same hearing also to the value of said gas territory, had examined the working maps of the United Fuel Gas Company which show its gas territory, wells, farm lines and other data usually carried on such maps, and we had been furnished with data as to the gas acreage of the United Fuel Gas Company;

besides, I had personal knowledge of the terms of the leases under which the United Fuel Gas Company had acquired much of its gas territory from the Hope Natural Gas Company, with which company I am now connected and was connected at the time of transfer of said leaseholds from the Hope Natural Gas Company to the United Fuel Gas Company, and at that time I had personal knowledge and records in my custody showing the terms of these leases such as date, name of farm, acreage, delay rental, gas well royalty, oil royalty, free gas right, surrender clause and other provisions; and when testifing at said hearing I understood that most of the natural gas territory of the United Fuel Gas Company was held under the usual form [fol 387] of oil and gas lease and the rest, in fee, and I had such information as to the form and terms of these leases such as amount of delay rental and gas well royalty, free gas right, duration and other provisions as was necessary, in determining the fair market value of said gas territory, and before valuing said leaseholds I made allowance on account of the annual payments required to be made by the terms of said leases as land, or delay rentals, and as gas well royalties. I understood the delay rental payments in the case of the majority of the leases to average $1.00 an acre per year and that most of the gas well royalties ranged between $200.00 per well per year and $300.00.

My judgment upon the information and data I had with regard to the gas leaseholds and gas territory of the United Fuel Gas Company was, so far as the same was indicative of the productivity of the territory, based upon my personal experience for many years with gas territory and especially with the gas holdings of the Reserve Gas Company, amounting to approximately 55,000 acres located in Harrison and Lewis Counties, West Virginia, which territory at the time I testified had produced some 315,000,000,000 cubic feet of [fol. 388] gas, meter measurement, and still is capable of producing 10,000,000,000 cubic feet of gas per year. This acreage is comparable with about 100,000 acres held by the United Fuel Gas Company in the Clendenin Pool and the said acreage of the United Fuel Gas Company in said pool is as "closely held" or in as solid a block as is said acreage of the Reserve Gas Company.

In addition, the Hope Natural Gas Company turned over some 37 wells to the United Fuel Gas Company about June

30, 1910, which wells are well distributed throughout the present territory of the United Fuel Gas Company and I compared the record of those wells shortly before the time of the hearing with their record in June, 1910, and this comparison was another basis for my conclusion as to the productivity of the gas holdings of the United Fuel Gas Company.

T. B. Gregory testified in substance and effect as follows:

That he is located at Pittsburgh, Pennsylvania, and is engaged in the oil and gas business, and has been so engaged for the last forty years, since 1884; that he is now connected with the following companies: he is president of the Union Heat & Light Company of Pennsylvania, serving various communities in northwest Pennsylvania; director [fol. 389] of the Pennsylvania Fuel Supply Company, probably the second oldest incorporated gas company in the state of Pennsylvania, with which company he has been connected in various capacities since 1884; president of the Manufacturers Light & Heat Company, director and vice-president of the Reno Oil Company, of Sistersville, West Virginia, producer of oil and gas operating in various counties in West Virginia; director and treasurer of the Tyler Oil Company, of Sistersville, West Virginia, oil and gas producers operating in a number of counties in West Virginia; one of the organizers and a director of the Ohio Fuel Refining Company, of St. Marys, Pleasants County, West Virginia; that the above are the principal companies with which he is connected, but there are others; that all of the above companies are producers of natural gas; that he has been connected with the Manufacturers Light & Heat Company as its president for about three years, and that as such officer he purchases all the gas and all questions of purchase of gas or gas territory are referred to him for decision, if he is present, or if not they are brought to his attention before anything is done; that no purchase of any kind is made to any extent without his approval, and that he has also general charge of the production of gas [fol. 390] for that company; that the Manufacturers Light & Heat Company purchases gas in West Virginia, Pennsyl-

vania and a very small quantity in Ohio; that it produces gas in West Virginia, Doddridge, Harrison, Hancock, Marion, Marshall, Monogalia, Tyler and Wetzel counties; that it has 775 producing gas wells in West Virginia, and that its production is substantial; that of the other companies mentioned by him the Reno Oil Company produces natural gas in West Virginia, but that he is not active in its affairs except as a director; that his principal work in the natural gas business is with the Manufacturers Light & Heat Company; that he has heretofore been connected as secretary and treasurer and an active director with the Union Investment Company, which piped gas to and supplied Morgantown, West Virginia, from Greene County, Pennsylvania, in the early part of 1888; that he assisted in the organization, was a director, manager and secretary-treasurer of the Fairmont & Grafton Gas Company, which was organized about 1891, and which piped gas to and supplied Fairmont, Belington and Grafton, West Virginia, and that it was later organized to pipe gas to Shinnston, West Virginia.

That during the war he was appointed assistant to the director of production and had charge of the Appalachian oil [fol. 391] and gas fields, and was asked to organize the bureau of natural gas in the Fuel Administration, and served in that capacity during the war; that he was at one time an active stockholder in the United States Natural Gas Company and the Triple State Gas Company, both of which operated in West Virginia in some of the territory now owned by the United Fuel Gas Company; that he was familiar with the territory owned by these companies in a general way; that he has been familiar with the production of natural gas in West Virginia ever since 1888, when a company with which he was connected piped gas and supplied Morgantown, West Virginia, which he thinks was one of the first companies organized in the state; that since that time the oil and gas business has been his principal business.

That he is acquainted in a general way with the properties of the United Fuel Gas Company; that the companies with which he is connected are considerably interested in knowing the extent of the dependable gas supply in West Virginia; that his company purchases gas from the Hope

Natural Gas Company, which in turn purchases gas from the United Fuel Gas Company at Cedarville; that he has examined the maps and data of United Fuel Gas Company [fol. 392] and familiarized himself with them for two or three years—in fact, for the last three years, ever since his connection with the Manufacturers Light & Heat Company; that the data examined by him included the history of gas production by the company, the decrease in rock pressure of the wells, the open flow of the wells, the sands from which the gas is produced, and all data indicating the life of the future supply of the business; that he is acquainted with the location of the leases and property controlled by the United Fuel Gas Company through an examination of the maps of that company, and is acquainted with the way in which said territory is put together, and with the manner in which it has been developed, and that in his judgment the development of the property of the United Fuel Gas Company has been done very judiciously, and that its properties are very advantageously located; that prior to his connection with the Manufacturers Light & Heat Company he had occasion to make some investigation of the United Fuel Gas Company; while he was director in charge of gas for the United States Government the question of the supply by the United Fuel and Gas Company for distribution at Louisville, Kentucky, came to his attention forcibly when the city of Louisville requested the Fuel Administrator to ration the supply of [fol. 393] the United Fuel Company to the various States of Kentucky, Indiana, Ohio and Pennsylvania; that the matter was gone into very extensively at that time, and the investigation caused an order to be issued to ration the gas in the city of Louisville refusing the request to ration it to other communities; that he is fairly well acquainted with the market for natural gas for industrial purposes uncontrolled by state regulation, and that he has considered the United Fuel Gas Company's properties in relation to that market; that from the investigation he has made of the United Fuel Gas Company's property and the information he has obtained in regard thereto he is able to form an estimate of the value of that property such as he would advise a company with which he was connected to act upon in case they desired to purchase the property,

and that in his judgment the fair value of the property, assuming that the United Fuel Gas Company wanted to sell it and some other company wanted to buy it, and excluding from consideration the producing plant and the transmission plant, would be in excess of $30,000,000.00; that in fact he would be willing to give $5,000.00 for a sixty-day option to buy the West Virginia property, the gas property alone, at $30,000,000.00, and agree to forfeit [fol. 394] the $5,000.00 if he did not meet the option; that in this estimate he does not include the producing plant or the producing wells, but just the reserve gas property, nor did he take into consideration any value which it might have for the extraction of gasoline, and that if there is any such value that this would be in addition to the estimate made by him; that he feels sure that if he could get an option such as mentioned above he would be able to handle the property at $30,000,000.00; that he has some friends who would like to join him in the purchase of it at that price; that he is not speaking of the Manufacturers Light & Heat Company, although it would be interested in a considerable portion of it; that the Manufacturers Light & Heat Company is in no way connected, by stock ownership or otherwise, with the United Fuel Gas Company; that he recommended to his board of directors the laying of a seventy-mile 12-inch line to connect with the United Fuel Company for the purpose of purchasing gas from it; that he observed the geographical location of the United Fuel Gas Company's property and the location of its wells as indicated on the gas map, which he saw in Pittsburgh in the office of the Ohio Fuel Supply Company, which maps have been available to him for a number of [fol. 395] years and purported to be maps of the property of the United Fuel Gas Company; that the maps referred to by him were in the office of the Ohio Fuel Supply Company, at Pittsburgh, and they purport to be the property of the United Fuel Gas Company in West Virginia, and are kept up to date, and these were the maps that he examined in order to get the data referred to by him; that the territory served by the Manufacturers Light & Heat Company in the distribution and sale of natural gas is principally in Ohio and Pennsylvania, all of the Ohio River towns from Pennsylvania south to New Martinsville,

West Virginia, on both sides of the river, New Castle, Pennsylvania, and the Pittsburgh district; that connections could be gotten to reach through to Indiana without building any other lines; that all this gas could be diverted from Buffalo, New York, to Erie, Pennsylvania, through existing lines; that the Manufacturers Light & Heat Company has large industrial markets; that there are probably more such markets available to the Manufacturers Light & Heat Company than to any other company—potteries, steel works and other factories—and that this market is substantially in excess of the supply now available to his company; that it could be tripled if an adequate supply could be guaranteed; that the Manufacturers Light & Heat [fol. 396] Company sells about 25 billion cubic feet of gas per year, and could sell, under the same conditions, three times that amount if the supply could be guaranteed; that the sale to the industrial consumers is made direct; that the witness's company is a public service corporation; that with the consumers that his company has at present it is necessary to deliver the supply of gas through public service corporations; that he is acquainted with the production and distribution plant of the United Fuel Gas Company, and assuming that that plant would cost approximately $25,000,000.00 to reproduce it, a company or individual would not be justified in erecting such a plant unless it had behind it as much or more acreage than the United Fuel Gas Company has; that they would be justified in having as much as they have, and are warranted in buying additional acreage as it is presented; that he thinks they would be very lax if they did not acquire such additional acreage if they could get it.

(In addition to the foregoing testimony of the witness given before the Public Service Commission and introduced in this case, the witness testified orally before the court in substance and effect as follows:)

[fol. 397] That in fixing the valuation that he gave for the value of the property of the United Fuel Gas Company he was acquainted with the character of title and the character of right which the United Fuel Gas Company had in the acreage that he was valuing, in a general way; that he has seen the statement introduced in evidence by Mr. Jay; that

he had examined all the records of the company as to pressures, maps and locations of the wells, and that in placing the value that he did upon the gas acreage he had in mind that the company did not own the gas but only held it under leases, such as are indicated in the statement introduced by Mr. Jay; that he has no reason to change the valuation that he put upon the company's property; that he has noted that the company owns in fee some 41,500 acres, that it has leases on some eighty odd thousand acres which has been developed by producing wells, and has in West Virginia some five hundred and odd thousand acres more upon which no wells have been drilled, and that knowing these facts and having examined the character of title in a general way that the company has to those various things, he has no reason to change the valuation he placed upon the property; that he made the valuation which he did from his general knowledge of the gas business, taking the pressures and an in- [fol. 398] spection of the working maps showing the gas developments, the general trend of the gas field, and the geological conditions showing anticlinals and synclinals; that in arriving at the value of the gas he considered the markets that are available for that gas; that in considering that all of the gas could not be marketed at once, but must be done over a period of years, he considered the interest on the investment during that time; all of these things were considered in arriving at his valuation.

The following further testimony of the witness is inserted verbatim at the request of counsel for the intervenors:

"Judge Rose:

Q. How did you make that valuation? Just make a short explanation.

A. Just from my general knowledge of the gas business, taking the pressure and an inspection of the working maps showing the gas developments, the general trend of the gas field and the geological conditions showing anticlinals and synclinals.

Q. What I want to get at is, assuming that you know that there is a million feet of gas or a billion under a particular piece of property, how do you value that million or whatever it is? Leaving out the other doubtful questions

you have been talking about, and coming down to some [fol. 399] particular thing that you know which nobody else knows—assuming that you do know that there is a definite quantity of gas under a piece of land covered by a lease of some other way, and you want to determine what the value of the amount of gas is, how do you figure that?

A. The markets that are available for that gas.

Q. You treat that gas—in other words, we will say there is ten million feet there, and you can get twenty cents for it at a particular market and it will take 15 cents to get it there, you say it is worth five cents a foot—am I right?—about fifty thousand dollars for that lease?

A. Yes, sir.

Q. That would be your way?

A. Yes, sir.

Q. Supposing you owned six hundred billions, or something of that kind, which you could by no possibility get there today or tomorrow, and you would break your market hopelessly if you did succeed in getting it all there at once—you have got to market it over a period of years. What deduction do you make for that?

A. The interest on your investment.

Q. You have made that?

[fol. 400] A. The costs—Well, I wouldn't know what else to ——

Q. Well, I say have you done it in your valuation?

A. Oh, yes. Over a period of years.

Q. How is that?

A. Over a period of a certain number of years.

Q. Well, I didn't follow your testimony; I didn't read a great deal of it. I didn't see that those calculations were made in most of the tables that I saw. They were made in the simple way that you got twenty cents for it, and the cost of constructing the line and sinking the well would be fifteen cents, and the difference was supposed to be the profit or value of the property, and I didn't see that there was any calculation made that some of it couldn't be delivered for ten years.

A. Oh, yes, that is all taken into consideration in the value.

[fol. 401] Cross-examination:

That he is president of the Manufacturers Light & Heat Company; that he has no position with the Ohio Fuel Supply Company; that he purchases some gas from the Ohio Fuel Supply Company; that there is a holding company called the Ohio Fuel Corporation that takes in the Manufacturers Light & Heat Company and the Ohio Fuel Supply Company; that Mr. George W. Crawford is president of the holding company and is also president of the Ohio Fuel Supply Company, but that he is not an employee of the Ohio Fuel Supply Company but is president of the Manufacturers Light & Heat Company, of which company the Ohio Fuel Company holds a large proportion of the [fol. 402] stock; that the Manufacturers Light & Heat Company does business in Pittsburgh; that the estimates of value which he has put upon the leaseholds of the gas reserves of United Fuel Gas Company are based largely upon the market for natural gas in Pittsburgh and in other territory adjacent thereto; that the Manufacturers Light & Heat Company increased its rates in Pittsburgh more than a year ago; that there was a protest against such increase; that there is no application pending by said company in West Virginia for an increase in rates; that in valuing the property of his own company he arrived at it by the same processes or estimates that he used in making the valuation of the United Fuel Gas Company property, and that he thinks that it is the attitude and reasoning adopted by the officials of all public utilities furnishing gas in West Virginia; that the rate of his company for natural gas in Pittsburgh is 63 cents, less 3 cents, or 60 cents net; that his company is taking from the United Fuel Gas Company approximately 4 million feet a day directly, and that it purchases considerable gas from the Hope Natural Gas Company, which, in turn, gets some of its supply from the United Fuel; that since he testified before, his company has built a line connecting its lines with the territory of the [fol. 403] United Fuel Gas Company; that the Hope Natural Gas Company is also building a line into what is known as the United Fuel Gas Company territory, and that with these lines built into the territory he still thinks the gas reserves are worth the amount stated by him; that the fact that the Hope Natural Gas Company line has been

built into the field and will remove large quantities of gas would have some effect upon the supply of gas in the field; it would make it somewhat more competitive, but that the fact that United Fuel Gas Company holds certain leases that were taken a good many years ago that could not be gotten at the present time on the same terms equalizes any difference that it would suffer in the competitive taking out of the gas by another company; that what he means by this is, the difference in rental of the leases taken years ago upon the basis of a certain amount for each well as compared to a rental of so much per thousand cubic feet today; that it is true that every time a million feet of gas is removed from the ground the rock pressure is decreased and more or less equalized throughout the field; that he does not think there is any material difference in the value of the United Fuel Company's property now as compared with when he last testified; that at the time he formerly testified there was no such thing as the Ohio Fuel Corpora-
[fol. 404]tion; that it was not thought of at that time, so that the valuation he gave was purely as a disinterested party; that it is true that he contends for the same formula in estimating the value of the reserves of his company; that gas in the ground is more or less fugitive, migratory and elusive, and will drift away along the lines of least resistance, and that the porosity of the sand has a great deal to do with this; that in fixing the values given by him he considered the problems involved in the construction of pipe lines to take the gas out and in a way that these lines would be impressed with a public service, but his valuation was put on the basis of a case of a willing buyer and a willing seller, and upon the theory that there was at a certain point and in a certain territory a demand for gas and that by reason of that demand or the necessities of the public utilities that desired the gas they would be willing to pay certain prices in order to get it, and the value of the property is determined largely by the rate at which you are able to sell the gas; that such rates are not altogether fixed by public service bodies; that in Pittsburgh the industrial rate is not so fixed; it is not regulated, and by that is meant the rate for gas sold for manufacturing purposes; that the
[fol. 405] Ohio Fuel Supply Company is selling gas in Columbus indirectly, and that the Federal court in Colum-

bus put a rate in effect within the last week of 55 cents for the first 10,000 cubic feet, 65 cents for each of the next 10,000 cubic feet, and 75 cents per thousand cubic feet for all over 20,000 cubic feet, with a 75 cent minimum charge; that this rate was for one of the subsidiaries of the Ohio Fuel Supply Company; that his company is at this time purchasing gas from the Hope Natural Gas Company; that it expects to take, within the near future, by reason of the pipe line which it has built into Roane County, about 2½ billion feet a year from the United Fuel Gas Company; that the delivery of this gas is now going on; that his company purchases this gas from the Ohio Fuel Supply Company at a price of 30 cents per thousand cubic feet delivered at Annamoriah, a point about 15 or 16 miles north of Spencer in Roane County; that there are no rebates on that price; that his company connects with a line that is called the West Virginia Fuel Supply Company; that it is about 15 miles from the United Fuel Company's lines to Annamoriah; that the 15 miles of pipe line connecting the two companies is owned by the West Virginia Fuel Supply Company or Fuel Gas Company, which is a subsidiary of the Ohio Fuel Com-[fol. 406] pany; that generally speaking he is acquainted with all of the public utilities selling natural gas in West Virginia; that he would not know whether or not there are any persons qualified to testify as to the value of natural gas reserves other than those engaged in the business in West Virginia; that those engaged in the business and identified with it would probably have a more general knowledge of the markets; that he thinks an engineer would be competent to make a study of the pressures and locations of the fields, and that the United States Government accepts such estimates as to gas reserves for depletion purposes in proven territory, but that he thinks those engaged in the business or identified with it would be the best qualified to answer the question as to value; that in buying properties he doesn't take the amount of gas actually in view into consideration, but relies on his experience as to the amount of gas that might be held in place in the ground; he takes the history of the wells and the field, the rock pressures, the initial rock pressures, and such thinks as that; that he did not make and never did make an estimate as to the billions of cubic feet that might be in place in the

ground; that he just takes the amount, takes the seven [fol. 407] hundred and odd wells of the company, looks at the rock pressures and their performances and the vast territory and arrives at a conclusion from his general knowledge of the historical facts developed by the territory of its value; that in the last two days he authorized the purchase of a fifty-acre lease right south of the Pennsylvania line in Marshall County for $2,000 on which a dry hole had been drilled; that regardless of the dry hole he authorized the purchase for $2,000 of that 52-acre lease, and it will remain for the future to determine whether he made a good or a bad purchase; that in his valuation of the reserve he made the statement that same would sell for the figure placed thereon by him, and that he meant by that that he would give that much for the property, and that since he testified before he has had a number of people come to him and say they would like to join him in the purchase at that price, and that this price is proper because the gas can be sold in Columbus and Pittsburgh for 55 cents or more per thousand cubic feet; that he has no doubt that he could not only find associates to buy the gas reserves but also the entire property of the company at a price greater than that fixed by the Public Service Commission or even at a price higher than that contended for by the [fol. 408] plaintiff as the fair value, and that this is because he thinks the gas can be sold at increased prices; the witness is asked the following question: "And I take it also that not only could you buy or be associated with buyers to buy the gas production, but in view of the vast earnings of this company you could no doubt form a syndicate to buy the entire property, couldn't you?" to which he replied "Likely"; that the price paid by the witness's company in the field for gas is 5 cents a thousand less than is paid by the Hope Company, which is a public utility, and which has a subsidiary doing business in Pittsburgh, but there is no possible connection between the Hope Company and the Manufacturers Light & Heat Company, and that the price which the witness's company is paying for gas in West Virginia to the Hope Company and to others is one of the elements of the rate charged in Pittsburgh.

A. G. Wamock testified in substance and effect as follows:

That he lives in Charleston, West Virginia, and moved there from Roane County twelve years ago; that he is engaged in the oil and gas business and has been so engaged for forty years; that he has had experience in that business all the way from digging of the ditch to the turning on of the gas in the house; that he has some interests in producing wells and has drilled wells; that he has bought and sold some acreage, but not a great deal; that he has leased gas territory on his own account and for companies in which he had an interest; that he came to this section in 1899 and [fol. 409] worked on the first well and has been here ever since; that he means the field now owned by the United Fuel Gas Company in Roane County; that he has not put in any wells or lines outside of the Roane County field, but has worked on laying the lines near Charleston in the early days; that he has been over most of the fields in Jackson, Roane, Clay and Kanawha Counties, in fact, has spent the last twenty years tramping over the hills in these four counties; that he is not familiar with Lincoln and Raleigh counties, but has some familiarity with Cabell and Putnam counties, but is not at all familiar with any of the acreage in Kentucky; that he is familiar with the location of the wells on the territory owned by the United Fuel Gas Company, with their respective ages, in a general way, and the production from the several pools; that he has seen a great many wells drilled in on all sides of the field and through the field in the four counties of Jackson, Roane, Kanawha and Clay particularly; that he does not know the number of acres which the United Fuel Gas Company owns or has under lease; that he knows the thickness of the sands from which gas is produced in the fields about which he is testifying; that in Jackson County gas is produced from the salt sand and the Berea, in Roane county the salt sand, the [fol. 410] Maxon, Keener, Big Injun and Berea, in Kanawha County from the salt sand, Keener, Big Injun, Weir, Squaw and Berea, and in Clay county from the Keener and Big Injun mostly; in Lincoln county it is mostly produced from the Berea, some from the Injun and some from the Big Lime; that he is actually engaged in drilling oil and gas wells and is acquainted with the cost of drilling gas wells in the Roane, Kanawha, Clendenin and Lincoln fields, and that the

average cost of such a well is $9,000,—that is, the complete well;—some cost more and some less, depending on the location, but that $9,000 is about the average; that he is acquainted with the production from the United Fuel Gas Company's wells to a sufficient extent to know that there is gas in the territory owned by that company; that taking his knowledge of the different fields and his experience in the different fields he has figured the amount of acreage that should produce gas at this time, and that in the four counties he has mentioned there are 300,000 acres controlled by the United Fuel Gas Company that should produce gas, including the acreage from which it has already produced considerable gas; that this is the acreage which he considers it has in the four counties mentioned by him that is pro- [fol. 411] ductive; that he has been over most of the territory controlled by the United Fuel Company and that it is judiciously joined up in most sections and that the drilling that has been done has been very well done, and that from the drilling that has been carried on he can get such information, as well as from his other knowledge, as convinces him that there is approximately 300,000 acres of producing territory in the four counties; that he could form an opinion of the value of this gas territory based on what is received for gas, which is one factor, and the demand for gas in the different fields; that in his judgment the gas territory owned by the United Fuel Gas Company, aside from the plant of the company—leaving that out of consideration—would be around $45,000,000.00.

(No cross-examination.)

S. W. Mears testified in substance and effect as follows:

That he lives in Pittsburgh, Pennsylvania, and has lived there for the last six years, and is engaged in the natural gas business and has been engaged in that business during all the time he has lived in Pittsburgh; that at the present time he is president of the Carnegie Natural Gas Company; [fol. 412] that his company sells gas in rather large quantities; that it sells gas under regulation of state authority and also sells large quantities of gas direct to consumers on private contract; that the gas sold to small consumers

is sold to those along its line; it does not supply any large towns, except that it has about 2,000 consumers in Munhall, Pennsylvania; that it sells gas to the Carnegie Steel Company, which is practically the only customer supplied by it; that in fact the Carnegie Natural Gas Company is a subsidiary of the United States Steel Corporation and supplies the steel company with natural gas; that it purchases gas along its lines from other producers; that he is acquainted with the price of gas at wholesale in the Pittsburgh district and has been acquainted with that price ever since he has been in Pittsburgh; that the tendency of the price of natural gas in recent years has been generally upward, and that he thinks the reason for this is that it costs considerably more to produce it; that the supply in the fields is harder to find, and naturally the price is upward; that the supply is decreasing and the cost is increasing; that he has made some study as to the price which could be paid for natural gas for heat producing purposes in competition with coal and other fuels—that is, the price [fol. 413] that could be paid for natural gas to take the place of coal; that in some manufacturing industries it depends largely on the location of the supply of coal, but he figures it out from his knowledge of the cost of coal at his plant in the Pittsburgh district; that he is fully advised as to the demand for natural gas as a fuel in manufacturing enterprises in the Pittsburgh district; that there is quite a large amount of gas sold for industrial purposes in that district, and if the gas could be furnished continuously a much larger amount than is now being sold there could be sold, in his opinion at least 100,000,000 cubic feet per day in addition to the present sales; that there are manufacturing industries paying at the present time 45 cents, but on the basis of dispensing with coal the actual cost to a plant such as an open hearth plant or pottery or something of that kind would be at least 35 cents per thousand for natural gas to compete with coal in that district, assuming that the coal would cost $2.75 per ton, a price that he received from a Pittsburgh coal company a few days ago, and the freight on that coal from the coal fields will run about $1.13 per ton, the cost of preparing the coal, taking care of the ash, shifting charges, hoisting charges, will run these figures to

[fol. 414] about $5.30 per ton of coal gassified through the producer; that it takes about one third of a ton of coal to produce a ton of steel, so that would be equal to about 5,000 feet of natural gas on the B. t. u. basis of West Virginia gas; that is, a third of a ton of coal was sufficient to melt a ton of steel; that would give you a figure of about 35 cents per thousand for natural gas; that this does not take into consideration economies that might exist in the use of natural gas, but just figures the coal gassified; based on the actual heating and lighting advantages of natural gas over producer gas in operating and overhead charges, let us take, for instance, in an open hearth furnace, the producer gas will only give from 200 to 300 heats before the furnace has to be replaced, and with natural gas you get from 400 to 500 heats, and it costs quite a little money to repair those furnaces.

L. B. Dennis testified in substance and effect as follows:

That he lives in Pittsburgh, Pennsylvania, and is vice-president of the Ohio Fuel Supply Company, and is a director of the United Fuel Gas Company; that so far as the Pittsburgh office of the Ohio Fuel Supply Company is con- [fol. 415] cerned he has general supervision of the maps therein, and that under his supervision the Ohio Fuel Supply Company keeps maps of the property of the United Fuel Gas Company, and that these maps are kept up to date from information furnished by mail from the office of the United Fuel Gas Company at Charleston, West Virginia; that he knows the witness T. R. Gregory, and that the said Gregory has had access to these maps and has made a close personal examination of them on several occasions to his knowledge.

(No cross-examination.)

John Davidson testified in substance and effect as follows:

That he lives in the city of Charleston, West Virginia, and has lived there for about thirty-one years; that he is engaged in the oil and gas business principally, and has

been so engaged for 17 or 18 years, and that he has leased land and operated it both for oil and gas during that time in the counties of Roane, Kanawha and Cabell, and some property in Ritchie county that he is interested in; that by operating for oil and gas he means leasing land and drilling wells, and that he has done some actual drilling and producing; that the oil which he produced was sold and [fol. 416] transported through Eureka Pipe Line Company's lines; that the gas which he produced was sold to United Fuel Gas Company, the Columbia Gas & Electric Company, and the Hope Natural Gas Company; that he has carried on a number of operations for oil and gas during the time he has been engaged in the business, some of which he has disposed of; that is, all companies in which he is largely interested have been sold; that he is now interested in two companies operating for oil and gas; that the companies of which he has spoken now have something over 4,000 acres, and that they had or were interested in about 16,000 or 17,000 acres in Kanawha county, which holdings were sold; that in addition to operating for oil and gas and selling its products he has also sold acreage itself; that he sold such property in Roane county in 1906; that he was interested in a block of acreage in that county and drilled a well upon it in the latter part of 1906 and sold the acreage after the well came in; that in 1920 one of the companies in which he was interested had leases in Geary district in Roane county, which were sold, and in 1923 it leased in Kanawha county a small acreage; that he is acquainted with the United Fuel Gas Company's gas properties in West Virginia, but is not very well acquainted with its properties in Kentucky; that he has known the [fol. 417] West Virginia property since 1906, when he began to make investments in oil and gas lands; that during all of the intervening years he has traveled over a great deal of the property looking for acreage that he might get for himself; that in fact he has been in every district in Roane, Kanawha and Clay counties that is producing any quantities of gas and oil, and that he has observed the actual development of the United Fuel Gas Company upon its properties in those counties; that he has had access to the records of the United Fuel Gas Company as to the development of its properties; that he has observed the loca-

tion of the wells in relation to each other and in relation to the company's property lines in a general way; that he has observed from the records the initial rock pressure of the wells in the different sands and the present rock pressure of the same wells; that in the beginning the Roane county sands—that is, the Big Injun—had an initial rock pressure of 470 pounds; today the rock pressure throughout the field, taking the Berea, both in Lincoln and Cabell and in Putnam and Jackson, and the Weir sand also, in his judgment the average rock pressure in these fields would be around 300 pounds, in some a little higher and in others a [fol. 418] little lower; that he has informed himself as to the quantities of gas produced from the properties of the United Fuel Gas Company; that the well which his company drilled in Roane county in 1906 came in with 4,000,000 cubic feet; that in the block of territory that company owned there, there were wells which came in with an initial flow of anywhere from four to eight million cubic feet; that he is acquainted with the cost of drilling wells in the Roane field, the Clendenin field and the other fields, and is also acquainted with the various sands in these fields; that he has drilled wells or had them drilled in all of these fields; that the average cost of drilling a well at this time would be around $8,500; that this differs in different sands, but that the above would be an average for all sands that are operated in these fields; that in the fields of Kanawha, Roane, Jackson, Clay, Putnam, Cabell and Lincoln gas and oil are found in the Big Injun, the Weir, the Salt sand, and some in the Lime; that he does not mean to say that gas is found in all of those sands in each of the counties named; that in Roane county, in fact, nearly all of the oil and gas produced is from the Big Injun; that in Kanawha there is what is known as the Weir sand, principally confined to Kanawha territory, and in Lincoln and Putnam, throughout those counties, is found [fol. 419] Berea grit, and in Jackson Berea grit, and also in Kanawha; that he is acquainted with the territory owned and controlled by the United Fuel Gas Company, and in his opinion it is the best selected acreage of any field in West Virginia for the economical production of natural gas, and that this is because of the compactness of the body of acreage gathered together; that in all the producing acreage that the United Fuel Gas Company has it is pretty hard

to get any leases on the inside of it, and for that reason it is better able to produce the gas at a less cost than producers not so situated, and the conservation of the field can be maintained longer by reason of this compactness; that the expense of production is less because the gathering lines cost less and it is able to so locate the wells that they do not have to drill quite so many in order to produce the amount of gas from the acreage; there will also be a saving in wells to protect the property line; the territory could be developed by drilling less wells than if it was contained in isolated tracts; that it is figured that one well to 75 or 100 acres is sufficient to produce gas in the ordinary sand; that in some sands it might require more, but in this sand that is sufficient in his opinion, and by having the acre-
[fol. 420] age compact and owning all of it you are not required to drill so many wells to get all of the gas; that he is sufficiently familiar with the properties of the United Fuel Gas Company and the operations of that company to give an opinion or place a value on its gas rights, exclusive of its producing plant, taking into consideration the property which has not been operated as a natural gas producing property, and that in his judgment the gas reserves or the gas rights of the company, exclusive of its plant and property already operated, which it owns in fee and under lease, is worth at least $39,000,000.00.

(The defendants objected to this answer of the witness.)

That in arriving at that valuation he treated the operated acreage and the acreage that he considered as tested acreage and reduced it to cubic feet of gas—that is, figured the quantity underlying these leases;—that on a part of the untested acreage he placed a value of $10 an acre, which part he considered would in time probably be gas territory, and a great part of it he discarded entirely as of no value; that these conclusions were reached by him from the devel-
[fol. 421] opment that he knows of in the field; that he is acquainted in a general way with the gas producing and distributing plant of the United Fuel Gas Company, and assuming that plant to be worth $25,000,000.00 or more, in his judgment United Fuel Gas Company would not be justified in expending the money that has been expended in its production and distribution system unless it

had a reserve of natural gas territory equal or greater than it actually has.

(The above answer was objected to by the defendants.)

That in arriving at the above value he did not take into consideration any value which the gas reserves might have for gasoline extracted from the gas; that if it has any such value that would have to be added to the figure given by him.

Cross-examination:

That through a stock company he was interested in the Cabin Creek Gas Company and the Central Gas Company and the Cabin Creek Oil and Development Company that controlled approximately 16,000 acres of gas territory in Kanawha County which was sold about a year ago; that at the time of the sale there were some ten or twelve wells on the property, having an open flow varying from two to [fol. 422] six or seven million, or an average open flow for all of them of about 27,000,000 cubic feet a day; that includes all of the properties held by the Cabin Creek Oil & Development Company, assignee of the Union Natural Gas Company; that the gas rights of one of the concerns were sold to the Libbey Owens Company, that is, the rights of the Union Natural Gas Company; that the open flow of the wells on this property was about 27,000,000; that the company got, as he recollects, $190,000.00 for the property; that this did not cover the entire 16,000 acres; that the rest of it was owned by the Cabin Creek Gas Company and the Central Gas Company, in which he was interested; that in the aggregate the open flow of the wells on this property was six or seven million cubic feet; that the stock of this company was sold to the United Fuel Gas Company; that he owned 22½ per cent. of the stock; that he can't state the amount he received therefor; that the United Fuel Gas Company operates, as appears from its records, something over 800 wells; that in his judgment it holds 210,000 acres that is proven gas territory, and in addition he thinks has 200,000 acres which he considers probable territory, and worth $10 an acre; that there probably will be 25 per cent. of that that will develop into [fol. 423] gas producing acreage; he thinks at least that

much of the 300,000 acres; that he arrives at this conclusion from a study of the maps and records of the company; that he did not place any value on the balance of the acreage held by the company; that he thinks some of it may develop into gas territory, but that he placed no value on it; that for what he considered the proven acreage he figured out the probable quantity of gas and considered it worth 4½ cents per thousand cubic feet, and figures out about $173 to $175 per acre; that he calculated the quantity of gas at the rate of 7,000,000 cubic feet per acre; that that is not an arbitrary figure, but is a pretty well established fact; that a great many of the acres in Roane county would, in his opinion, produce a whole lot more, and have produced more; that he has taken this 7,000,000 cubic feet per acre on the 210,000 acres and depleted it by 45 per cent. for the gas already taken out and placed a price of 4½ cents on the gas thus remaining, which figures about $175 per acre; that it is his opinion that the 210,000 acres would produce 7,000,000 feet of gas to the acre; that in 1906 he drilled a well on some of this acreage; that there is now drilled on that same acreage ten wells; that the total number of acres is about 970 for the ten wells; that the United [fol. 424] Fuel Gas Company's records show that those ten wells have produced since 1909 around 13,000,000 feet to the acre and are still producing, so on the average he considers in the Roane county field — some of it is above the average and some below the average; that the territory above referred to is in the Roane county field, which is one of the richest gas fields in the state; that there are wells in the Weir sand in Kanawha county that are producing an average of 7,000,000; that is a conservative average; that in reaching his average of 7,000,000 cubic feet per acre he took into consideration the fact that some of the sands produced more and some not quite that much; that he arrived at the figure of 4½ cents per thousand cubic feet because he figured that it could be sold upon the basis of the value of 4½ cents per thousand cubic feet free of cost — in other words, net cash; that he arrived at his figures by taking the amount of gas that underlay these leases, depleted that 45 per cent., and multiplied by 4½ cents; that he considers it worth the 4½ cents; that he considers an average price of $175 an acre; that he sold some acreage

in 1920 in Geary district for $166\frac{2}{3}$ an acre; that he sold acreage at practically that price; that he means by this [fol. 425] a company in which he was interested; he didn't figure on the basis of acreage; that $4\frac{1}{2}$ cents is what he considered the gas in the ground worth at the market price; that he never knew of any selling on that basis; that he considers it worth that; that he considers the territory worth $173 per acre—that is, the acreage upon which he figured the quantity of gas after depletion; that the Cabin Creek property referred to by him and sold to United Fuel Gas Company is considered in his estimate, and that he treated it on the same basis as the other acreage; that just about one-third of it was included in the acreage he considered as proven, and part of the acreage is oil; that he treated about one-third of it at $173 an acre, and some of it would average a greater value than others; that he used 7,000,000 feet of gas per acre throughout the entire field of this 210,000 acres and then depleted that 45 per cent. in arriving at his values, and that this figured about $173 per acre, and that is the average that he placed on the whole of it, but some of it he considers worth three or four times that; that whatever acreage is in the Cabin Creek property that is not proven he did not consider in the $173 an acre estimate; that he does not remember [fol. 426] the number of acres in the Cabin Creek property that he considered as probable at $10 an acre, but that quite a bit of it was discarded as no good; that probably 1500 to 1800 acres he considered as of no value; that he thinks about 2500 or 2600 acres of the Cabin Creek territory was proven acreage; that he has no connection with the United Fuel Gas Company as an officer, director or stockholder; that he has examined the records of that company within the last thirty days, and had examined them time and again theretofore, but has made a recent examination within the last thirty days, and that this examination was made for valuation purposes; that he testified on a former hearing as to the value of the property and at that time his recollection *is* that he fixed a value of $33,000,000 (?) on it, perhaps a little less; he does not recall what the total acreage was at that time; that in his examination made in the last thirty days he looked over the maps giving the acreage and all the records that he thought neces-

sary; that he worked two or three days on the figures; that he had the papers and records of United Fuel Gas Company in his office; that he did not have Mr. Davis's report; that he did see his report there, but did not examine it; that he does not know how many acres of proved territory [fol. 427] Mr. Davis reports; that he does not know how many acres of proved territory are in the Clendenin field; that he has not the figures with him; that he took it by districts—that is, magisterial districts;—that he has no report showing how he arrived at this valuation; that he knows the acreage generally that the United Fuel Gas Company owns in the Clendenin field; that in arriving at the value he took that district as a whole; that the list shown him was made from the records of United Fuel Gas Company from information furnished by it; that the list does not show the proved acreage of all these fields; that he arrives at it from his practical knowledge of the fields; that he has not at this time any data that he can put in to indicate the various kinds of acreage; that he did figure it up for the several fields, but that he bases his statement on his knowledge of the field, the development of the field, the maps and the figures for the quantity of gas in that field; that he did not reduce it to writing, but that he figured on it, but has not the memoranda with him but can produce the same; that he has a memorandum which covers only the results; that there is about 20,000 acres that he estimates of proven territory in the Cabin Creek field, that in the 210,000 acres treated by him as proven [fol. 428] territory he included such territory in Kentucky as is actually operated only, which was something over 4000 acres; the balance of 206,000 acres is in West Virginia; that he depleted the total quantity of gas on account of past production 45 per cent; that in doing this he figured that some of the wells were 60 per cent. exhausted, some less and some more, but on the average that the territory from which production was being actually had was 45 per cent. exhausted; that the company is drilling wells right along in all of the fields, and that he considers 45 per cent. is a fair depletion for the proven acreage on account of the gas already taken out; that this is not an arbitrary estimate, but it is his best judgment; that he does not know

about anyone else using the same system; that in his opinion the gas is worth 4½ cents in the ground, and that in arriving at that he took into consideration the general trend of the market, having in mind the outside market, and speaking particularly of the market for the United Fuel Gas Company; that he believes that the United Fuel Gas Company could get that price for it over and above the cost to them—in other words, the cash basis for it to the Hope, the Carnegie, or any of those companies; that he was just figuring what he thought the stuff was worth; [fol. 429] that he does not know how many acres the United Fuel Gas Company includes in the Kanawha pool; that he knows the number of acres it has in Kanawha county; that his information is that of the Kanawha pool there are parts in Kanawha county and it goes on through Kanawha and Boone counties; that he does not know what the United Fuel Gas Company designates as the Kanawha pool; that he has not made any reference in the world to Mr. Davis's report.

That he has classed 300,000 acres of the territory as prospective; that some of it in all probability will develop into producing acreage, and that he valued the whole at $10 an acre for the reason that it is a great protection to this acreage to hold it in reserve; that he sold his stock in the Cabin Creek Gas Company, and he thinks that the company had 8,000 acres in which it owned the gas rights and half the oil rights; that there were around 2,000 acres of this that were proven territory.

That on a former hearing he testified that the value of the company's gas rights was $32,000,000.00 to $33,000,000.00; that the increase to which he testifies today is brought about by the development of additional acreage since that time and the increase in the price of gas; that this additional development, some of it has been right up [fol. 430] here in Kanawha county, up in the eastern part of Roane, extending quite a distance; that there is new development in nearly all of the districts; that this additional development reflects five or six million additional value, together with the market conditions; in other words, the market price in Cincinnati is about 35 cents today; the Columbia is getting something over 50 cents for it, I believe, in Cincinnati; that according to his estimate the

proven territory figures about $173 an acre, and that is what he considers a fair value for the property; that he, in making his estimate, refers to the rate at which he thinks the property would sell; that he sold acreage up there in 1920 at $166 2/3 an acre, and that it was quite a distance from the undeveloped acreage; that the depletion of 45 per cent for the gas as taken out he applied to all of the proven acreage uniformly—that is, on the whole acreage;—that this was done in order to arrive at an average which would apply to the whole field; that perhaps some of it is only depleted to a very small extent while some to a larger extent; that at the time of the sale of the Cabin Creek property it was depleted perhaps hardly as much as 45 per cent [fol. 431] but more than that at this time; that the Cabin Creek Gas Company had an interest in the oil, but that he cannot tell what the production of oil was; that he sold 292 shares of the stock of the Cabin Creek Gas Company to the United Fuel Company; that there was a total of 1,300 shares and that he held between 22 and 22½ per cent; that Mr. C. A. Gates also sold his stock, and that he thinks Mr. Gates had 293 shares; that he sold his stock for $65,700—that is, $225 per share; that he does not consider the price at which he sold the stock the full value of the property; that there was between 32 and 33 barrels of oil production, which was pretty well settled; that the oil produced was a high grade oil; that it brings a premium, he thinks of 25 cents a barrel; that generally speaking a settled production ordinarily is worth $1,000 a barrel, but this depends on a great many conditions; this production was not worth that because it was pretty close, expensive to operate, and there was a one-fourth royalty; that he would not say that $1,000 a barrel was a fair estimate, it always depending on the way the farm is drilled, and other elements; that this oil was produced in the Weir sand; the Cabin Creek Gas Company owned one half of the oil production; that he could not give an estimate of the value of the oil [fol. 432] production at the time of the sale without knowing the market price; that if oil was worth say $4 a barrel at that time the value of this production would be from twenty to twenty five to three thousand dollars, or the whole interest of the Cabin Creek Company in the property something like $48,000; that he could not say whether

there was any undrilled oil acreage, but he thinks there was; that he would think it was worth $10,000; that the gas wells cost at the time anywhere around $12,000 to $14,000; that the reserve gas in the acreage drained by these wells would make the wells worth more than they cost, and that he could not tell what the value of the wells would be without knowing the production; some of them might be worth twice as much as they cost and some not so much, depending on their production; that the wells cost $50,000 to $55,000; they were expensive wells; that there was about 2,000 acres to 2,500 he considered proved, about 3,500 probable, and from 1,800 to 2,000 doubtful; that he considered the probable acreage worth $10 an acre; that he does not think the acreage which he would value at $10 an acre in the Cabin Creek property was as much as 3,500 acres; perhaps there was about 2,500 acres of this, which he thinks is worth $10 an acre; that he did not classify it separately, [fol. 433] but included it as a part of the 300,000 acres in the whole United Fuel Gas Company field, but that he thinks the 2,500 acres of Cabin Creek company acreage referred to by him was worth that amount and the proved acreage $173 an acre; that while it may be that the stock of himself and his associates in the Cabin Creek Gas Company was sold for a sum very much less than the values that he now fixes upon that property, he thinks that it may be worth three times what they sold it for to the United Fuel Gas Company; that that company has a market, pipe lines, and so forth, and that it can supply gas from its wells at a better prices than anybody else, so it makes quite a difference in value from its standpoint and at what he would sell it; there are many things that enter into the question; that he sold it for what he was willing to take for it, and they expected the United Fuel Gas Company to make some money on it at that price; that he and his associates had operated the property since 1916 and had realized from the operations about 150 per cent, and that if what they realized from operations be added to what they received for their stock it would indicate that they realized about $375 a share for the stock.

(In addition to the foregoing testimony of the witness [fol. 434] which was offered, he was also introduced in

open court upon the hearing and testified in substance and effect as follows:)

That in fixing the valuation which he did upon the gas properties of the United Fuel Gas Company he was acquainted with the fact that the larger part of it was held under leases, some of it, however, being in fee, and that he knew in a general way the character of title which the company had thereto; that since he testified before the Hope Natural Gas Company has laid a line into the field, which would indirectly affect his judgment of the value; that in his opinion it would increase the cost on the part of the United Fuel to some extent; that the Hope would be a competing producer; that because of this factor entering into the question since that time he thinks his valuation should be reduced 20 per cent.

Cross-examination:

That while it affects more or less the profits that the company would make, he arrives at the value largely from the profits to be derived from marketing the gas; that he thinks the marketing costs would be increased and the United Fuel would have to meet that increase; that if the Hope Natural Gas Company would take out of the fields 80 [fol. 435] to 90 million feet per day it would decrease the United Fuel's Supply, unless it took care of the situation, and this is done by protecting the territory adjoining that where the gas has been taken so as to get the gas before the competitor takes it; this necessarily costs a great deal of money; that the United Fuel Gas Company's acreage is very compact, and it would be very hard to deplete any of its present acreage; that should be taken into consideration; that if a large amount of money was required to protect the property from being depleted by others it would necessarily cut down the profits and mark the property worth less; that he thinks there is demand enough in time to take all the gas that will be produced; that he is a producer of gas and is selling gas to the Columbia Gas & Electric Company, but not to United Fuel; that he has sold gas to United Fuel; that there is a stipulation in his contract with the Columbia Gas & Electric Company that the price will be increased in the event of an increase allowed by the Public

Service Commission for gas in the territory from which it is taken; that the gas procured by the Hope Natural Gas Company in the United Fuel's field is purchased from independent producers; that he knows this only from what he has heard from other people; that in his judgment the [fol. 436] Hope coming into the field would decrease the value fixed by him heretofore upon the United Fuel property about 20 per cent., so that it would now be worth, according to his judgment, about $31,200,000.00.

W. C. Hanby testified in substance and effect as follows:

That he lives in Charleston, West Virginia, and has lived there about 20 years; he is now a member of the New York Stock Exchange and is in the brokerage business as a member of the firm of Hardy, Dana & Company; that prior to entering into that business he was vice-president of the Central Trust Company and had active management of that company for about five years, and that prior to that time he was engaged in financing various and sundry bond propositions; that he has financed more than one such proposition; that if he were requested to loan or supply the funds for a construction project similar to the United Fuel Gas Company with the understanding that the total amount of money to be invested would be for an average of one or two years and were to be used for that purpose prior to any return from any operations, the charge for supplying the money would depend largely on the ultimate [fol. 437] period of time for which the money was to be tied up; that if based on a long-term bond issue—that is, permanent—it would be one thing; financiers usually figure the cost of a bond issue for construction propositions at a somewhat higher rate than for a going concern, and if the money were involved for any material length of time for the ultimate repayment of it we would figure a 6 per cent. bond issue at about 90, which would figure about 10 per cent. for the cost of money; assuming that it were to be financed on the ordinary twenty or twenty-five year bonds, if these were six per cent. bonds we would figure a discount of ten per cent. on it, which would make the cost for the first year 16 per cent.—that is, the bonds would

bear 6 per cent. interest and the charge for financing would be 10 per cent. on an average; some propositions might be a little less and some a little more; there would be a premium of 10 per cent. on the loan to be deducted from the amount of the principal only, and which would have the effect of running your cost for the first year to 16 per cent., and this 10 per cent. so deducted would be the cost of doing the financing, and in addition to that the interest, of course, would be paid for the first year.

That the charge for a loan made to a going concern is [fol. 438] not the same; the least charge he ever made was 5 per cent., and that was to a going concern, where the security was at least seven times the amount of the loan, and it was at a time when money was very cheap and it wasn't difficult to finance a bond proposition or a bond issue; that under the most favorable circumstances the minimum charge for financing is 5 per cent. and in addition to that the interest on the money during the time it was in use.

Cross-examination:

That 10 per cent. was charged on short-time money, and that while the payment would be spread over the life of the issue of bonds the initial investment would be made the first year; that he is not familiar with the financing of the United Fuel Gas Company at this time; that they did have a first-mortgage bond issue several years ago; that it did not do its financing in Charleston that he knows of; that his company bought some of the bonds at 95 some years ago; that if a sufficient amount of depreciation is set up he considers United Fuel Gas Company bonds good securities, but that he has made no investigation of the affairs of the company and does not know about this; that his activities [fol. 439] in floating bond issues have been almost entirely local.

James J. Cabot testified in substance and effect as follows:

That he lives in Charleston, West Virginia, and has lived there for about 4½ years and is engaged in the natural gas and oil business, and carbon black business; that he is

vice president of his father's company, Godfrey L. Cabot Incorporated, and assistant manager of the Kanawha Valley Products Company; that the Kanawha Valley Products Company is engaged in the production of natural gas and has leases on approximately 2017 acres in Cabin Creek district in Kanawha county in what he should say was the Kanawha gas pool, and that it has been operating these leases since 1911; that since that time it has produced from this 2017 acres approximately 20 billion cubic feet of gas, or approximately 10 million feet per acre, and the wells are still producing; that in the month of May 1924 they produced 147,388 thousand cubic feet, or 3,684 thousand cubic feet per well per month; that this territory is surrounded by producing wells, which were being operated during the time that the Kanawha Valley Products Com- [fol. 440] pany was operating; that his company purchased 125 acres south of the Kanawha river and paid therefor $25,000, or about $200 an acre, and that there were no wells on it at that time; that it was acquired for the oil and gas rights; that there was no indication of oil, and he does not believe there ever will be any oil produced on it; that the $200 an acre was paid as a gas proposition, that he has had an offer from the Libbey-Owens Bottle Company to purchase the gas of his company at 14 cents a thousand cubic feet, that company to lay the lines to the line of his company's leases and the gas to be furnished at the line of the leases, stripped of gasoline—that is, after the gasoline is taken out—and that he declined to accept the proposition because he thought the price was too low.

Cross-examination:

There are a large number of concerns doing business strong enough to build a line to his field to buy his gas, but there are only a few that are near enough to make the laying of such a line financially profitable; that the location of his particular field and the necessities of the Owens Bottle Company made it a possible customer; that not in every case where gas is produced in a field remote from [fol. 441] Charleston could a customer be found at the price that he named; that he feels certain that if there were no lines into the Clendenin field right now and a big field was opend up there would be plenty of companies that would

go in there and pay 14 cents for the gas; that there is no large market now except for the big companies that are engaged there; that he believes that a line could be built to Pittsburgh from the gas fields and the gas sold at 14 cents in the field and make a profit on the pipe line between the leases and Pittsburgh; that there is not now any large market except with the large companies; of course, there is a small local market; and that if there were no lines into the field in order to market the gas he would have to organize transportation lines to transport it away from the field; that the market would depend largely on the amount of proven territory, but considering the amount of proven territory the United Fuel Gas Company has he considers that the market price would be at least 14 cents; that if the United Fuel Gas Company has the amount of proven acreage which it claims he considers that it would be worth $200 per acre, some of it worth more than $200 an acre, but he considers $200 an acre a fair average; that he knows something of the location of the acreage; that [fol. 442] the acreage which is unfavorable is of doubtful value and no one could tell anything as to its fair value.

Ira G. Sayre testified in substance and effect as follows:

That he lives in Charleston, West Virginia, and has been engaged in the oil and gas business for about 14 years, and that he has been a producer of natural gas during that time; that he produces principally in the Kanawha field in what is known as the Kanawha gas pool on Cabin Creek, and that his property is contiguous to some of the property of United Fuel Gas Company; that he has gas leaseholds covering nearly 12,000 acres; that he sells his gas at the well; that he is selling it now to the Marmet Gas Company, the Montgomery Gas Company and the Owens Bottle Company; that he has been selling to the Owens Bottle Company for about five years, and that that company takes most of his gas; that they take it at the property line and that he has the right, under his contract, to extract the gasoline; that they are paying him 10 cents per thousand cubic feet; that he has made other sales for from 12 to 15 cents per thou-

sand cubic feet at the pipe line; that the contract was made [fol. 443] with the Owens Bottle Company three years ago, two years ago last March (March 1924); that since that time the price of gas has not decreased any; that he does not expect to renew the contract with the Owens Bottle Company when it expires, at the same price; that he expects to get more for it at that time; that he is acquainted with the cost of drilling wells and knows what his own wells cost; that on the average the cost of drilling a well in that particular section is around $8,000; that he has reference to a completed well and has no reference to any proportionate cost of any part of a dry hole.

Cross-examination:

That he sold gas to the Marmet Gas Company; that it is a local company selling gas to domestic consumers at Marmet; and that he receives from that company 15 cents per thousand cubic feet; that he also sells gas to the Montgomery Gas Company; that it is a public service corporation and has lines to his leaseholds, and that he gets 12 cents per thousand cubic feet from this company; that he has no other industrial consumer than the Owens Bottle Company; that there are other consumers close enough to him, but that he has had no applications recently from anyone else for gas; that he has had no surplus to offer; [fol. 444] that he did have at one time application from a local concern on the north side of the river engaged in the chemical business, being a concern of Mr. Ogden's; that he does not think the market for gas in his locality is limited, but that he could sell considerably more at a higher price if he had it; that he does not fix the price of 14 cents as the price of gas in the ground; that if he had his wells out in the country in the absence of any public utilities or any other markets the value of the gas would be a guess; that he would not attempt to fix a value for it under such circumstances.

That he sold gas to the Owens Bottle Company, Montgomery Gas Company and Marmet Gas Company at the prices of 10 cents to the Owens Bottle Company, 12 cents to the Montgomery Gas Company, and 15 cents to the Marmet Gas Company; that to those three consumers he sold nearly a million feet a day during the year 1923; in

the year 1924 the Marmet Gas Company only used about 100,000 feet a day, the Montgomery Gas Company about 200,000 feet, and the Owens Bottle Company about 700,000 feet, so that it would be about a million feet a day for 1924.

[fol. 445] J. G. Ward testified in substance and effect as follows:

That he lives at Charleston, West Virginia, and is engaged in the oil and gas business principally, and has been so engaged for about thirty years; that he is now connected with the South Penn Oil Company and has been connected with it for 27 years; that he is division superintendent for that company in the territory south of the Little Kanawha River; that the business of his company is divided into two divisions, oil and gas, and that he looks after both these divisions indirectly; that his company purchases gas in the territory in which he has charge and has been purchasing such gas for about a year or eighteen months; that the gas it purchases is from the Clendenin pool in Big Sandy district, Kanawha county, and that it has been paying therefor on an average of about 8 cents a thousand.

(No cross-examination.)

Ben C. Grosscup testified in substance and effect as follows:

That he lives in Charleston, West Virginia, and has lived there practically two years, engaged in the business of pro-[fol. 446] ducing, purchasing and selling natural gas, and has been in that business for the two years that he has been in Charleston; that he is vice-president and manager of the Charleston-Dunbar Natural Gas Company and has been such for the period of two years; that he purchases gas for that company in Putnam and Lincoln counties in what he commonly calls the Turkey Creek field, and that the price he has had to pay for gas in the past two years varies from 9 to 12 and 14 cents at the mouth of the well.

Cross-examination:

That he had purchased gas in Lincoln and Putnam counties, in what is commonly called the Turkey Creek field, at from 9 to 12 and 14 cents at the mouth of the well; that these purchases in the last two years have varied from about 20 million to about 60 million feet a month, depending on the weather conditions—that is, approximately—it runs from 25 to 40 per cent. of the company's total sales; that it varies from 25 to 60 millions a month, an average of 35 to 40 millions a month; that this gas is purchased from different companies, J. W. Smith & Company, Coal State Gas Company, Henderson Development, Laurel State, King [fol. 447] Gas Company, Star, Tampico Gas Producing Company, Kirtley, and King & Kingry. During that period these last two named were consolidated into other companies, and that he also had a right to purchase from the South Penn Company at the price of 14 cents, but it was never exercised; that the Charleston-Dunbar Natural Gas Company needed gas very badly; that the prices arrived at and paid by him were generally after a great deal of fighting to get them down to the price that was actually paid; that in most instances the gas was delivered at the mouth of the well or on the lease.

Edward Reynolds, Jr., testified in substance and effect as follows:

That he lives in Cincinnati, Ohio; that he is treasurer and assistant secretary of the United Fuel Gas Company, and has been such for a little over a year and a half; that he has the same official position with the Columbia Gas & Electric Company and most of its subsidiaries; that he has made up a statement showing the minimum requirements of United Fuel Gas Company for working capital, and that the figures are based upon the actual experience of the company and upon its minimum requirements; that these minimum requirements consist of two months' operating [fol. 448] expenses, excluding therefrom bond interest and Federal taxes, $570,709.00; materials and supplies on hand, $272,335.00; prepaid accounts, $104,649.00; cash in bank, $250,000.00, or a total working capital required of $1,197,

693.00, subject to a credit of the amount obtained through accounts payable of $175,000.00, or a net requirement for working capital of $1,022,693.00; that the item of $570,709.00 is approximately the average two months' expenses of recent years' business; it is not any particular two months but is the average two months; that it is necessary for the company to have this amount because it has to meet its labor and material charges in cash in its current operations, and its cash receipts from the sale of the product do not come in coordinately with the sale of the product, but are received seven or eight weeks later, and the big cash requirements on the company come customarily at a period of the year when its earnings or cash receipts are apt to be rather below the average—that is, in the late summer and fall—and the provision of two months' requirements is not a bit excessive to meet these demands as shown by the past experience of the company, and in fact this does not represent the requirements that have to be met for bond interest and so forth a little bit — a time, and which bond [fol. 449] interest is due every six months. This amount has to be built up from month to month in order to have the money ready to meet the same when it comes due, and the same is true likewise of the items of taxes, both state and Federal.

The item of $272,335.00 represents the inventory of materials and supplies on hand as of December 31, 1923, and is the actual amount of such materials that the company was carrying at that time, and is representative of the amount which it carries throughout the year; that it is necessary to have these supplies and materials on hand at the various plants in order to meet the company's requirements; that the item of $104,649.00 for prepaid accounts is to take care of certain items of expense, such as insurance, taxes, land rentals, well royalties and items of similar nature that are customarily paid in advance for a period in some cases of a quarter of a year and in the case of insurance and taxes for a full year; and this item makes provision for the proportion of that that is not taken into consideration in the two months' average expenses; that this item is based upon the actual experience of the company for the year 1923.

That the item of cash on hand, $250,000.00 represents [fol. 450] the money which it is necessary for the company

to keep in the bank to carry on its business. The company does business over a widespread area in West Virginia, Ohio and Kentucky, through its subsidiaries. In many small communities in which it collects cash for gas sold it has found it advisable to maintain bank accounts; in most of those communities a great number of the banks act as collecting agencies at less cost to us than we could otherwise collect the money, and it is less expense to keep a deposit in the bank than to employ agents for these collections. The amount of $250,000.00 is well within the experience of the company. This amount is in some 44 banks, to which customers pay their accounts. These banks do not receive compensation for acting as collecting agencies other than the few days the money is left with them on deposit, and it is found that this is an economical way of collecting the revenue.

The credit of $175,000.00 fairly represents the average amount which the company continually owes on current accounts payable, and consequently it gets a credit for this amount, so that the net amount of working capital which the company needs, based on its actual experience, is $1,022,693.00.

[fol. 451] That the United Fuel Gas Company owns all of the outstanding stock of the Cabin Creek Gas Company and the Warfield Natural Gas Company; that he has recently had experience in selling a preferred stock of a gas and electric public utility, to wit, the Union Gas & Electric Company, of Cincinnati, Ohio, which is a well established concern, of which he is treasurer and assistant secretary; that the stock which was being offered was a first preferred stock with the customary preferences as to assets and dividends over the common stock, in very considerable ratio to the common capital stock of the company—that is, the preferred stock is less than one-third of the common capital stock of the company; that the company is an established one and has a record of successful operation and earnings in the distribution of natural gas and electricity in an important city, and is the type of utility whose securities are desired by investors. The stock pays monthly dividends of 55 cents a share, which is $6.60 a year on a $100 par value. In the last five months the company has sold over two and a half million dollars' worth of this stock.

The company undertook to put it on the market itself, selling it entirely through its own employees. Up to the end [fol. 452] of May it cost in excess of $5.25 a share to make these sales, and in addition to this cost the company used its office force and employees, who were not compensated for that purpose; that is, it does not include any salary to any executive officer of the company with the exception of one of the vice-presidents, who was in charge of the commercial operations, and includes less than one-third of his salary, and he devoted at least that much of his time to the business; that the witness devoted a large part of his time to the business, as well as the secretary of the company, but that the figure given includes no part of his salary; that to have made the sale of this stock by an outside organization that wasn't interested in it otherwise than selling it, it would have cost more, as he was advised by banking friends; that the consideration to the company for undertaking to sell the stock itself was largely that it thought it could do it cheaper than by having it done through brokers or bankers.

Cross-examination:

That the United Fuel Gas Company acquired some of the stock of the Cabin Creek Gas Company from Mr. John Davidson; that it acquired 585 shares either from Mr. Davidson or his associates, and paid therefor $130,000.00; that there was outstanding 1,300 shares of stock; that he [fol. 453] does not know what the indebtedness of the Cabin Creek Gas Company was at the time the purchase was made.

D. C. Jay testified in substance and effect as follows:

That he lives at Charleston, West Virginia, and is superintendent of the land department of the United Fuel Gas Company, and has been such for the last ten years; that he knows the witness R. E. Davis who has testified in this case, and that he furnished to Mr. Davis the information about which that witness testified in regard to the company's leases and land holdings, and that the company had on December 31, 1923, leases or deeds in fee for the prop-

erty represented in Mr. Davis's report, all of which leases were alive at that time; that monthly reports are made by him of leases acquired, leases canceled and leases expired, and a copy of that report is sent to Mr. Denning's office at Pittsburgh; that the Mr. Denning referred to is the secretary of the Ohio Fuel Supply Company who has testified heretofore in this case.

[fol. 454] G. A. Cunningham testified in substance and effect as follows:

That he lives in Charleston, West Virginia, and that he is in charge of the engineering department of United Fuel Gas Company; that his department locates the wells drilled by that company; that whenever he makes a location of a well he makes a report thereof; that this report is made upon a plat showing the boundary lines of the farm on which the well is located; that when this plat is approved as to the drilling of the well there are several copies of it made and distributed to the various officers of the company, and an entry is made on a map kept in his office of each such location; that a copy of the plat above referred to is furnished to Mr. Denning, secretary of the Ohio Fuel Supply Company, at Pittsburgh, Pennsylvania; that he also keeps a record of wells drilled by other companies in close proximity to the territory of the United Fuel Gas Company, which information is placed on the maps in his charge and is also furnished to Mr. Denning at Pittsburgh; that this information includes the location of these nearby wells as well as the production therefrom when completed; that the production of wells drilled by the United Fuel Gas Company is not sent out by the witness, but is sent out [fol. 455] from Mr. Wallace's office.

(No cross-examination.)

D. A. Ketchum testified in substance and effect as follows:

That he lives at Charleston, West Virginia, and is assistant general superintendent of United Fuel Gas Company, and has been such for about ten years; that he is familiar

with its operations in the field; that he knows the work it does, how long it takes, what material is used in it, and what lines the company has, and that he has charge and knowledge of the operation of the company's gas wells in the field; that he knows when these wells are in use and when they are not in use; that when they are turned off or put out of use it is done under his direction; that a record is kept in his office of the time they are turned off; that the information given by Mr. Davis as to when the various wells of the company were in use and how long they were in use was furnished to Mr. Davis by him from his office, and such information is correct.

That he is familiar with the stock of materials and supplies which the company carries on hand for its business; [fol. 456] that the inventory thereof was taken under his direction and furnished to the accounting department; that the inventories furnished by him to the accounting department are correct; that the information obtained in the report of Mr. Uebelacker, which he states he got from the records of the company, as to the length of pipe lines, size of pipe, and other information as to the plant of the company, was obtained from the company's records, and the same is correct, and it represents pipe lines and other appliances actually in use at the time; that this statement is true as to the material and costs shown for each of the company's wells, and likewise as to telephone lines and as to the number of meters and meter stock kept on hand; that all of the larger work of the company is done by what is known as gang formation, as referred to by Mr. Uebelacker in his testimony, and that this is the most economical way, as witness believes, for doing the work; that experience teaches this to be so; that he furnished Mr. Uebelacker information as to the cost and method of abandoning wells, and that this information was furnished from the records kept under his direction, and correctly reflects the facts in regard thereto.

That by minute pressure is meant the pressure taken [fol. 457] from a well wide open, or the open flow when the pressure at the top of the well is zero, and at the end of the first minute; that is, the pressure taken at the end of one minute after the well is closed in; that by rock pressure is meant the pressure taken after it ceases to rise, when it won't rise any more—that is the final rock pres-

sure; it may be a long time or it may be a short time; that is, the pressure taken at a time after the well is shut in and is kept shut in until the pressure ceases to go up; that he has these pressures taken of the wells of the company at various intervals and keeps records thereof, and that he furnished these records to Mr. Davis, and that the records that he furnished correctly reflect the minute pressures and rock pressures of the various wells reported; that he also keeps a record of the minute pressure of the wells above the line pressure; that by this is meant, when you come to a well on the line you take the pressure of that and then shut in the well and take the pressure after the first minute that it is shut in, and the comparison of these two shows the minute pressure above the line pressure.

(No cross-examination.)

[fol. 458] W. J. Hightower

The evidence of this witness, given before the Public Service Commission on July 1st, 1924, was introduced, in substance and effect as follows:

That he lives in Charleston, West Virginia, and is now and has been for about three years assistant treasurer of United Fuel Gas Company, and that as such assistant treasurer he has had charge of the general books of the company at Charleston, West Virginia; that he obtained from the records and books of the company certain information as to expenses and costs of operation and the cost of certain items of its property and furnished the same to Mr. Uebelacker; that he has examined the statement filed by Mr. Uebelacker as Uebelacker Exhibit No. 10, called his working papers, and finds that the information therein contained as to expenses and costs was figures furnished by him from the books of the company, and that the same are correct as to all of the figures contained in said statements.

(The Exhibit Uebelacker No. 10, as heretofore stated, is not included in this record for the reason that such figures were checked by the witness John Jirgal, an accountant for the defendants, and the same were by him found to be correct.)

[fol. 459] That the company keeps a daily record of the sales of gas made to wholesale and industrial consumers; that this record includes the deliveries at a complete city plant, including both domestic and industrial consumers; that the gas is measured before it is put in the distribution plant by a meter that is read every day; that each of the deliveries to wholesale consumers is measured by a meter which is read every day, and that he keeps a record of these measurements, and that the same as shown in Mr. Uebelacker's exhibit are correct.

That the figures contained in Uebelacker Exhibit No. 11, giving certain data in regard to gasoline earnings over certain periods, were based upon information furnished by him to Mr. Uebelacker, and that the same are correct; that he is familiar with the prices received for gasoline by the United Fuel Gas Company and subsequently by the Virginian Gasoline & Oil Company for the gasoline produced by it since the first of January 1920 in the plants formerly used by United Fuel Gas Company; that he has made up a graph showing the relative price of gasoline by years for the two companies from 1920 to 1924, inclusive, and files the same as part of his evidence, marked Hightower Exhibit No. 1 (which is hereto attached as part [fol. 460] hereof); that the figures in the first column, beginning on the left, represent the price of gasoline; that the figures at the bottom show the years covered by the graph, and that the figures across the graph over the years indicate the average price received for gasoline during each of said years; that the figures 11.45 shown upon the graph is the price being received for gasoline at the time the witness was testifying, July 1st, 1924; that all of the prices indicated on said sheet are the average prices received for gasoline for the times covered, after deducting from the amount received freight costs and charges which the company had to bear in connection therewith; that the method of arriving at the average price for the year was to divide the total amount received by the actual number of gallons sold; that he has made up a statement purporting to show the amount of gas sold to the various classes of consumers and the average price received therefor for the year 1923 and for the year ended April 30, 1924, and also the number of consumers, the quantity of gas sold, the average

rate therefor, and total revenue received therefrom for the year 1923 in West Virginia cities and in cities outside of West Virginia, the figures for making which were taken from the books of the company and from the records actu- [fol. 461] ally kept by him, and which statement he files as part of his evidence marked Hightower Exhibit No. 2 (and which is attached hereto as part hereof).

That he has also made up a statement in two sheets showing the receipts from gas sales in the cities of Huntington and Charleston by months, for the year 1923 on the first sheet and for the year ended April 30, 1924, on the second sheet, which statement was made up from the records of the company kept by him, and which was filed by the witness as part of his evidence, marked Hightower Exhibit No. 3 (and is attached hereto as part hereof).

That he has made up from the books of the company kept by him a statement showing the miscellaneous income and the source thereof of the company for the year 1923, which statement is correct, and is filed by him as part of his evidence, marked Hightower Exhibit No. 4 (and is attached hereto as part hereof).

That he has made up a statement from the books of the company kept by him showing the total gas sales and expenses, sales and revenues from West Virginia cities, mileage of transmission lines and total expenses of the United Fuel Gas Company, the Warfield Natural Gas Company and the Cabin Creek Gas Company for the years 1921, 1922, [fol. 462] 1923, and for the twelve months ended April 30, 1924, which statement is correct, and which he files as part of his evidence marked Hightower Exhibit No. 5 (and which is hereto attached as part hereof).

(The witness W. J. Hightower testified before said Public Service Commission on the 31st day of December 1924, and the evidence given on that occasion, in substance and effect as follows, is here introduced:)

That he filed heretofore as Exhibit Hightower No. 1 a graph showing the trend of the price of gasoline from 1920 to the 30th day of April 1924; that since that time he has extended said graph so as to show such trend of price to

include eleven months of the year 1924 instead of five months as in the previous graph, and files the same as part of his evidence marked Exhibit Hightower No. 1-A (which is attached hereto as a part hereof); that the figures at the lower right-hand corner of the graph "present rate 6.50" represent the price being received by the company at the time the witness was testifying for gasoline.

That he has likewise carried the statement which he has heretofore made up showing gasoline earnings and expenses for the first four months in 1924 down to and including the [fol. 463] month of October 1924, and files such statement as part of his evidence marked Exhibit Hightower No. 2-A (which is attached hereto as part hereof).

That he has also made up a statement showing the gas sales and expenses for the year ending November 30, 1924, and files the same as part of his evidence marked Exhibit Hightower No. 3-A (which is attached hereto as part hereof).

That he has heretofore made up a statement showing the accretions to the plant of the United Fuel Gas Company up to December 31, 1923, and that he has likewise made up a statement showing the increase in capital expenditures for additions to the plant during the year 1924 to *to* the 30th of November of that year, and files said statement as part of his evidence marked Exhibit Hightower No.4-A (which is attached hereto and made a part hereof); that this statement includes the net additions to investment; and by this is meant that there is not included items added to take the place of items retired.

That he heretofore filed a statement showing the gas sales by months in the cities of Huntington and Charleston for the year 1923 and for the year ending April 30, 1924; that he has brought this statement down to the year ending [fol. 464] November 30, 1924, and files the same as part of his evidence marked Exhibit Hightower No. 5-A (which is attached hereto as part hereof).

Cross-examination:

That the sales of gasoline by the Virginian Gasoline & Oil Company are not controlled by the consumption of gasoline; that the price of gasoline has been decreasing throughout the year; that the contract of the company is for its out-

put, and that when the weather is colder more gas is sold and naturally more gasoline is produced, and it is disposed of by a contract extending over a period of a year; that the company has but one contract, and that is based on the tank wagon price at Philadelphia, and the quantity supplied is the output of the company; that the item of freight referred to is for the freight on the gasoline; that the company pays the freight on the gasoline to Philadelphia or the point to which it is shipped; that there are no rebates on account of this payment, but that the same is money paid out by the Virginian company; that this practice obtained in prior years, but that the contract under which the company sells its gasoline is not as favorable as prior to 1923.

[fol. 465] Redirect examination:

That the figures on the graph 25.73 cents for the year 1920, 19.92 cents for the year 1921, 18.42 for the year 1922, 14.86 cents for the year 1923, and 10.50 cents for the first eleven months of 1924 represent the average price received by the company for gasoline during those respective periods, and that the figure 6.50 cents represents the price which the company is now receiving for gasoline.

(That the said Hightower again testified as a witness upon the hearing before said commission on the 22d day of January 1925, and his testimony on that occasion is now introduced, in substance and effect as follows:)

That he has made up the statement of gasoline expenses and earnings for the year ending December 31, 1924, and files such statement as part of his evidence, marked Hightower Exhibit No. Z (which is attached hereto as part hereof); that he has likewise made up a statement showing the amount of money borrowed by the United Fuel Gas Company by years since and including the year 1909, and files the same as part of his testimony marked Exhibit Hightower No. Y (which is attached hereto as part hereof).

[fol. 466] Cross-examination:

That the figures $12,525,000.00 are the total amount of money borrowed over the period from 1909 down to and inclusive of 1924; that the company has outstanding approxi-

mately $12,000,000.00 in bonds; that less than two million of these bonds are now in the sinking fund; that the statement showing $5,750,000.00 of bonds is because of the fact that the balance of the bonds were issued to take up other outstanding obligations of the company, which other obligations were given for the original purchase, statement Y reflecting only the new money borrowed from time to time and put into the business; that in the statement Exhibit Z there is included an item of bond interest of 34,000.00 and also the one eighth royalty under the contract between the Virginian Gasoline & Oil Company and the United Fuel Gas Company; that the increase in gross earnings of the gasoline company for the month of December over the month of June is approximately $77,000.00; that the gross earnings for the months of November and December are both larger than for the previous month, and that the earnings for those months are larger than any month since May 1924; that this is due largely to the increased production, although there was a small increase in price.

[fol. 467] (That the said W. J. Hightower further testified in open court in substance and effect as follows:)

That he has heretofore filed a statement, Exhibit Hightower No. 4 A, showing the capital expenditures made by the United Fuel Gas Company down to November 30, 1924; that since that time he has brought said statement down to include the whole of the year 1924, and that he files the same as part of his evidence marked Exhibit 3 J. C. Hightower No. 4 B (and the same is hereto attached as part hereof); that the statement indicates certain kinds of materials used in distribution, production and transmission, and the totals of each kind and the grand total of $2,044,778.24, which is the amount added to the capital account by construction completed and put in use during the year 1924; that in the case where red figures are used it indicates that the investment was decreased for those particular items—that is, that more was retired in the case of those items than was replaced; that the account for financing shows an increase of $165.75, but that this does not include any interest or items of that character, they being charged into invest-

ment costs; that all of the items included in the statement were added to the plant of the company during he year [fol. 468] 1924, and are in addition to the amounts retired in each of the accounts; that is, they are net additions, and wherever the amounts retired are in excess of the amounts added they were shown in red, and wherever amounts added were in excess of the amounts retired they are shown in black, and the net addition was $2,044,778.34; that the commission allowed approximately $660,000.00 of this; that the remaining part of it has been completed and put in use since the 30th day of November, 1924, the date the statement before the commission was based upon.

That in 1923 there was collected from the domestic service of the United Fuel Gas Company in West Virginia $1,304,429.42, and from the same service in 1924 $1,409,991.16, and from the industrial service in 1923 $995,249.70, and from the same service in 1924 $616,430.06, making the total receipts in 1923 from the West Virginia consumers $2,299,678.49, and a total from these two services in 1924 of $2,026,421.22; that in 1923 there was delivered to the domestic service above referred to 6,071,422 thousand cubic feet of gas, and in 1924 to the same service 6,564,308 thousand cubic feet; to the industrial service in 1923 5,573,285 thousand cubic feet, and to the same service in 1924 3,545,703 thousand cubic feet, a total to these two services [fol. 469] in 1923 of 11,644,707 thousand cubic feet, and to both services in 1924, 10,110,011 thousand cubic feet; that the average price received for the gas delivered in 1923 was 19¼ cents per thousand cubic feet, and in 1924 20.04 cents; that the difference in average rate is due to the fact that a larger proportion was furnished to domestic consumers in 1924 than in 1923, and that the average from domestic consumers is about 21 cents and from industrial consumers about 17.

Cross-examination:

That Hightower Exhibit 4-A, introduced heretofore, shows on November 30, 1924, and during the preceding months an item of incomplete construction of $1,334,037.10, and that the statement introduced now, Exhibit 3 J. C. Hightower No. 4-B, shows incomplete construction $80,341.60; that this is for the reason that during the month of

December the construction incomplete prior to that date was completed and transferred into the actual investment on the books; that he is in a position to say that all of the property referred to under the three heads was actually put in use during the year 1924.

[fol. 470] Redirect examination:

That the statement filed by the witness, Exhibit 3 J. C. Hightower No. 4-B, shows something over two million dollars of property added in 1924 as completed construction, while the exhibit before the commission showed $660,000 completed and $1,334,000 as incomplete; that the item of incomplete construction shows on the statement Exhibit Hightower 4-B was not all commenced in the month of November, but was done along during the year 1924 and completed and put in service in December, 1924; for instance, a compressor station, $670,000—that compressor station was completed in the month of December and put in service in that month; that the new property put in use did not produce any additional gross earnings during the year 1924; that the $1,333,000 which was not completed on November 30, 1924, was completed, most of it, in the month of December, 1924; that some of it may have been completed on November 30, but was not yet transferred into the investment account on the books.

[fol. 471] John L. Dickinson testified in substance and effect as follows:

That he lives in Charleston, West Virginia, and is vice-president of the Kanawha Valley Bank and president of Central Trust Company, and is actively engaged in the management of both of those institutions; that he has been connected with the bank about thirty-three years and with the other institution since its organization, about eight or ten years; that the institutions with which he is connected have financed some gas companies and other development propositions, and that he is acquainted with the charges ordinarily made for financing a company until it gets into operation; that the charge for financing a company for

the development of a well proven gas territory by a gas plant where there was a market for the gas—that is, to provide finances for the purpose, including interest during construction, and not including the period after it became a going concern having earning power, which would warrant a different consideration, the charge would be from 12 to 15 per cent.; that would include the interest return charge on the lump sum, as well as the charge made for financing the transaction.

[fol. 472] Cross-examination:

That he knows of such a proposition being financed in Charleston; that while he has no objection to telling, still he is of opinion that to give the name of the company would be given the public information it is not entitled to; that it would make public information which is strictly private; that the proposition he has in mind right now is a rather small one, amounting to some $15,000; that several years ago he had one that ran up to $100,000, and that the net return at that time was approximately 12 per cent., and that on another proposition, a timber and coal proposition, involving some $350,000, the charge was about the same; that there are quite a good many applications for financing such developments, but there are not so many of them accepted; that his experience is entirely local; that they were not going concerns; that he is not speaking of the class of concerns that were already in operation, but has reference to financing concerns during construction and until they had reached an earning power; that he does not know of any financing in this community of a company the size of the United Fuel Gas Company; that the financing of such a company would require outside assistance.

[fol. 473] H. A. Wallace testified in substance and effect as follows:

That he lives at Charleston, West Virginia, and has lived there about twelve years, and is engaged in the natural gas business and has been so engaged for about 33 years; that he is vice-president and general manager of the United Fuel Gas Company, vice-president of Columbia Gas & Elec-

tric Company, vice-president and general manager of Virginian Gasoline & Oil Company, president of Cabin Creek Gas Company, and president of the Warfield Natural Gas Company; that the Warfield Natural Gas Company and the Cabin Creek Gas Company are subsidiaries of the United Fuel Gas Company; that he has been general manager of the United Fuel Gas Company since about 1915 or 1916; that prior to that time, from 1912, he was general superintendent of the company; that during all the time he has been connected with the United Fuel Gas Company he had knowledge of its well drilling operations, and still has; that the reports of the results of the drilling of wells are made to him by the men drilling the wells in the field, and that he keeps these records in his office; that these records show the production of the wells from the time they are completed, and that they constitute what is [fol. 474] commonly called the log of the well, that the record of the log of the well consists of a complete report of the various formations which the drill passes through in the drilling of the well, giving the thickness of the different strata, the total depth of the well, the general results from the top of the hole to the bottom, including the gas or oil that finally comes out of it; it also shows the casing and tubing put in the well and also any casing that is removed from the hole prior to the completion of the well, and this record is kept in my office. These reports are sent from my office to the office of Mr. Denning, of the Ohio Fuel Supply Company, in Pittsburgh; that Mr. F. W. Crawford, who is an officer of the Ohio Fuel Supply Company, is president of the United Fuel Gas Company, and this information is furnished to him because of the fact that he is president of the company; that he furnished the logs of the wells to Mr. Davis for the purpose of making up his report, as well as the other information referred to by him in regard to the wells, and that the information furnished by him was correct.

That he has a general knowledge of the amount of materials and supplies which the company keeps on hand for the conduct of its business, and that it does not keep any [fol. 475] larger quantity than is reasonably necessary to meet the demands upon it from time to time; that his endeavor is to keep the supplies as low as practicable and as

good business will warrant to transact the necessary amount of work where needed.

That he is familiar with the proposed schedule of rates involved in this proceeding; that he advised with the officers of the company in making up that proposed schedule; that there are different rates provided in the schedule for what is commonly termed domestic consumers and what is commonly termed industrial consumers; that the term domestic consumers includes the householders, for heating, lighting, and so forth; the industrial service includes manufacturing rates for industries such as mills and factories and plants of that kind; that the rate proposed for manufacturing purposes is somewhat lower than that provided for domestic purposes; that the reason for making the difference in these rates in the schedule is explained by the witness as follows:

We have always known, in a general way, that the cost of service to the domestic consumer greatly exceeded the cost of the service to the industrial user, caused largely by the fact that the industrial service was secondary and [fol. 476] subordinated to the domestic service. The maximum domestic demand fixes the maximum hourly producing capacity we must have in our field, and also, very largely, fixes the maximum transportation capacity which must be maintained; and, over ninety per cent. of the distribution expense is for the domestic service; and for at least six months of the year, our chief source of revenue is from industrial consumers, that is, during the summer months, when the domestic consumer uses very little gas, the industrial consumer takes care of our finances, so to speak.

We have had Ford, Bacon & Davis, Incorporated, make a very careful investigation of the relative cost of these two services, and the schedules filed here are the result of their advice, after making a careful study of this cost. We have also taken into consideration that the industrial service has been constantly, and will continue to be, more and more, inferior, so to speak, to the domestic service, caused principally by the increased demand by the domestic users for gas in cold weather, which will necessarily cause more frequent interruption to the service to industrial users.

That the result of the study made by Ford, Bacon & Davis referred to by him corresponds absolutely with his own

[fol. 477] experience and observation of the plant, and teaches that it is a correct conclusion as between the two services; that he has observed carefully the kind of service given to domestic consumers by the United Fuel Gas Company during the time he has been connected with it, and is also acquainted with the kind of service given to domestic consumers by other natural gas companies; that the service given by the United Fuel Gas Company is of an extremely high grade—in fact, to his knowledge, more so than any gas company in the country.

That the United Fuel Gas Company sells gas delivered at Cedarville to the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company; that the average price for gas delivered to these two companies at this time and as of December 31, 1923, is the same; the average price for gas during said time being $22\frac{1}{4}$ cents.

The witness being shown copies of two papers, one dated the 31st day of October 1923, purporting to be a contract between United Fuel Gas Company and the Hope Natural Gas Company, and the other dated November 12, 1923, between the United Fuel Gas Company and Pittsburgh & West Virginia Gas Company, stated that the same were modifications of a former contract or contracts upon which the United Fuel Gas Company was delivering gas to the two [fol. 478] companies mentioned, and said contracts were offered in evidence, marked respectively Wallace Exhibits Nos. 1 and 2, and are attached hereto as part hereof.

That there has been no change in the price of gas delivered by the United Fuel Gas Company to the two parent companies nor to the Louisville Company nor the Portsmouth Company; that there has been a slight modification of the contract of the Louisville Company by which a slightly higher price is received temporarily; that the increases in price made by the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company were made voluntarily by those companies; that they found that it was necessary for the United Fuel Company to spend large sums of money in preparing lines, drilling wells, building compressor stations and annually overhauling the entire system; that this expense for work of that character will run in excess of three million dollars, while the budget as worked up calls for expenditure of two million nine hundred and

some thousand dollars; that owing to the wet weather, bad roads, and so forth, the actual expenditures will go considerably over this, but the expenditure of this money will not increase the output but it will merely maintain it at the late level; that he will be very well pleased if we main- [fol. 479] tain it at the same level that has been established, and that the additional wells are being drilled and the compressor stations established for that purpose; that the United Fuel Company agreed to do a certain amount of drilling and to make certain expenditures as a consideration for the Hope Company and the Pittsburgh & West Virginia Company agreeing to the increased price; that this was work, however, which would have had to have been done regardless of the change of contract; that the particular things that were to be done as consideration for the change of contract were simply stated in a conversation in the Pittsburgh office and there was no record made of it, and the witness cannot state what they were any more than that they were general additions that would have been undertaken had the contracts not been concluded.

Cross-examination:

That the City of Charleston is a consumer of natural gas, and that he thinks the city of Huntington is also such a consumer of natural gas, both from the United Fuel Gas Company; that the Columbia Gas & Electric Company and the Ohio Fuel Gas Company are purchasers of gas from the United Fuel Gas Company; that they are both public utilities, their main business being in the state of Ohio; and that [fol. 480] they are regulated by some governing body in that state; that the Huntington Development & Gas Company is also a public utility at Huntington, West Virginia, and Ashland, Kentucky; that to the best of his recollection the Sovereign Oil & Gas Company is owned by Huntington parties; that it is not a public utility as far as he knows; that at the present time it is either selling or contracting to sell some gas to the Louisville Gas & Electric Company, and it also uses some to make carbon black; that there are a number of other small companies selling gas to the United Fuel or to the Huntington Development & Gas Company, one or the other; that the Charleston Dunbar Natural Gas Company is also a public utility, as is also the Montgomery

Gas Company; that he does not recollect of any other public utility gas companies in this section of the state; that he does not remember the number of gas wells drilled by the United Fuel Gas Company during the year 1923, but that it is in the neighborhood of fifty wells; that in the year 1924 it had completed, up to the time the witness was testifying, December 30, 1924, between eighty and ninety wells, all of which were gas wells except perhaps one or two oil wells; that the number of wells drilled will run pretty close to his estimate in the budget above referred to by him; that [fol. 481] the wells were drilled mostly in Roane county, some in Kanawha and possibly some in Jackson; that he was, at the time it was made, familiar with the division of the areas of proven and probable territory testified to by Mr. Davis; that the wells drilled during the year 1924 were practically all drilled in proven territory, what gas and oil men call inside territory—that is, proven or probable territory; that he testified about two years ago before the commission in another hearing that the amount of operated acreage of the company was 70,755 acres; that that acreage has been enlarged since that time, but that he could not state to what extent without going over the maps, nor could he give any idea as to the extent without making this examination; that he meant by operated acreage that that was practically operated; that it was determined by figuring that a well operated a certain amount of acreage or tested a certain amount of acreage; that he has forgotten how many acres he allotted to the well, possibly fifty to a hundred acres; that it would no doubt be true that the rest of the acreage was classed as unoperated, unless he classed a part of it as probable gas acreage or proven gas acreage, which should have been done; that he couldn't state whether there was any discussion two years ago as to that; that he possi- [fol. 482] bly made the statement at that time that the company had 826,243 acres, of which 70,255 acres were classified as operated, and 755,585 acres as unoperated, as it sounds reasonable that he would make a statement of that kind; that he could not really say what the figures would be as to the part of the 755,588 acres which would be considered proven, what part the probable acreage, and what part wild-cat acreage at that time; that it would be to a considerable extent what he would call proven or probable acreage today, with the exception of what drilling he has

done as proven otherwise as to the confirmed ideas we had at that time; that he does not think that he included in his classification of operated acreage all the proven territory; that in the 755,588 acres there was included both proven and probable acreage; that there has been consideration given by the company before this time to the classifications of proven, probable and wild cat acreage; that this was given by Mr. Ralph E. Davis, who he believes testified to the division of acreage; that he cannot state how many wells have been drilled in the last two years in what is now classified as probable territory, nor to what extent the proven acreage has been extended during that two years; that the chances are that two years ago in making the statements he made [fol. 483] relative to the producing territory and the wild cat territory, as he originally stated, the wild cat territory would take in everything except the actually proven territory, although there would be a large amount of this acreage in his mind that would be practically proven gas territory, and a great deal of it very probable gas territory, to the best of his judgment, from the field drilling that has been done previously; that the operated acreage is merely the wells that have been drilled, allowing a small amount of acreage around each well, which we knew between those wells was proven territory, but he could not state how much it would enlarge any certain classification; that the purpose of his testimony before the commission previously was to let them know how much operated acreage the company had and how the reserve was carried; that no doubt the commission would understand that he considered a great amount of this wild cat was probable acreage, or he would not be carrying it; that it has been the history of the company to carry a large proportion of wild cat acreage, and acreage that is either included in proven or probable acreage, and that he would have very good reason for thinking it was practically proven gas territory; that in his ex- [fol. 484] perience as a gas man he would not take up acreage and carry it unless he had some reason for believing it was underlaid with gas, and that he is certain that a great amount of the other acreage is underlaid with gas.

That he recollects going over the proposition with Mr. Davis and allotting the acreage as to proven and as to probable and wild cat acreage, but that he does not recollect whether it was brought out on the hearing in the former

case; that he recalls the testimony on the former hearing in substance that the company had approximately 826,000 acres of territory under lease, and that he and Mr. Davis testified that 70,255 acres was operated acreage and 755,000 acres unoperated, and that in order to ascertain the estimate of probable reserves the company has in gas, the then present wells of the company, according to the estimates and methods used, would have 123 billion cubic feet of gas; that in addition to that Mr. Davis and the officers of the company had made 871 locations, both in operated acreage and unoperated, approximately about 160,000 acres, and from which an estimate was made of 228 billion cubic feet, making a total of 351 billion cubic feet of gas; that the estimate now made of 663 billion cubic feet of gas is very easily determined from the wells drilled [fol. 485] since the former estimate; that the wells referred to on the locations formerly could be readily drilled in United Fuel Gas Company's acreage, and should be practically all producing gas wells; that there could be that many legitimate locations made, all of which should be producing gas wells; that he testified on the former hearing referred to that a great majority of the tests developed by the United Fuel Company lie in Spencer or Roane county field, Clendenin field and Kanawha field; that practically all of the unoperated territory is not tested and known territory; that a very small percentage of it is; that the Clendenin field is a lighter field than the territory north of it, and that there is a lot of acreage in that field that is still doubtful, and that the above statements hold true today; that there is a small proportion of the company's gas acreage proven as compared to the total amount carried; that the 136,000 acres treated by Mr. Davis as proven is, he considers, a small percentage of over 800,000 acres; that he agrees with Mr. Davis that there is 126,000 acres which is practically proven and classified as probable, which, combined with the proven, would make about 25 per cent. of the total, which he considered a small proportion; that it is necessary to carry a large amount of acreage in any [fol. 486] utility, and it has reasons for picking up, holding and carrying this large amount of acreage with the future in view; as to it being designated as probable territory,

it is practically closed up in a large, solid block, and no doubt one-half of this will be proven up to be valueless—one-half of the number of acres we have under lease; that he will be very well pleased if it is proven fifty per cent. of the acreage the company has is gas territory; that he absolutely thinks at the time he was testifying on a former hearing that one-fourth of the acreage was proven or probable; that in his judgment he always felt that the company had that amount of gas acreage; that the greater part of the wells drilled since that time were drilled largely within what was considered proven and probable territory; that he does not recollect at that time making any estimate of the gas reserves; that he may have seen Mr. Davis's estimate; but that the difference in the amount is easily answered by the fact that the drilling that has been done since has shown the acreage up as proven; that he does not believe that there has been a well drilled since that time that did not justify the conclusion that it was proven acreage; that he has not, to the best of his recollection, sur- [fol. 487] rendered any productive territory in the last two years; that the proven acreage has been increased and not decreased, but that he cannot say to what extent; that he would say that the company has more proven gas acreage today than it had two years ago; that there has not been a great deal of change as to the probable gas territory, but possibly that has increased to some extent; that he couldn't give an intelligent reply as to the increase in the gas reserves by the development in the last two years; that he agrees with Mr. Davis in his figures as to the amount of gas, and feels satisfied that they are correct, and that he was equally satisfied with the figures he gave two years ago as to the gas reserve under the so-called proven acreage; that he thinks Mr. Davis's report is about as fair an estimate as could be obtained as to the gas reserves; that he stated in the hearing two years ago that there was nothing to lead him to believe that there were large gas reserves outside of the present fields; that the production of more gas would involve drilling on the property already acquired; that he testified on that occasion that because of the increased domestic demand it was necessary to curtail the supply to industrial consumers; that at the time the witness was testifying, on December 30, 1924, the tempera-

[fol. 488] ture was ranging about 20 degrees above zero, and it was necessary then to cut off the supply to all industrial business; that the purpose of this curtailment was to take care of the domestic consumers; that the facilities are only sufficient to fully meet the domestic demand at peak load times; that the wholesale consumers are also proportionately cut back during such times; that the Ohio Fuel Supply Company has been curtailed on cold days; that the supply to the Ohio Fuel Supply Company and the Columbia Gas & Electric Company is for domestic service at Columbus and Cincinnati; that the gas sold by the United Fuel to the Hope Company is for domestic purposes, and the same is likewise true of the Pittsburgh & West Virginia Gas Company and the two Kentucky companies; that the Columbia Gas & Electric Company and the Ohio Fuel Supply Company are not curtailed as are the Hope Natural Gas Company and the other companies referred to, because they have the first call on the gas in accordance with their contracts; that necessarily during cold weather the supply to the Columbia Gas & Electric Company is increased; the supply to all companies is increased in cold weather; that the supply to the Columbia Gas & Electric Company is not proportionately larger during the cold weather than the other domestic service.

[fol. 489] That an increase in the supply to the Columbia Gas & Electric Company on one day of ten to fifteen per cent. over the previous day would indicate that the weather was that much colder and that the gas was needed; that the Columbia Gas & Electric Company is the parent company; its owns the gas, and it has always been the practice to take care of its needs, and to that end the supply to industrial consumers is curtailed if necessary, and that if it became a question between the supply to industrial consumers and the parent company on the coldest days the parent company would receive the preference, if it was supplying gas on those days to domestic consumers only; it was to take care of the domestic consumers, and necessarily he feels they should be taken care of in preference to the industrial consumers; that the Columbia Gas & Electric Company and the Ohio Fuel Supply Company are the parent companies who own the United Fuel Gas Company, and they have prior rights to the gas for that reason, as well as prior con-

tracts for the gas, and it is so stated in the contracts with the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company; that there has been in the last few years an increasing demand from domestic consumers for natural gas; that he could not state how much increase [fol. 490] there had been in 1923 over the year 1921; that the circumstances under which the contracts which he offered in evidence with the Pittsburgh & West Virginia Gas Company and Hope Natural Gas Company were made were that the United Fuel had a prewar contract with the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company extending over a period of ten years from 1916; the price beginning in 1916 was about 10 cents a thousand, and at the expiration of the contract it would be about 15 cents a thousand. Conditions became such that we could not comply with that contract unless at an enormous loss; and that the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company realized—as they were in the gas business they knew the increased price of material, drilling, and the enormous depletions of the field; that the average gas per well was so much more when the contract was made; that it would be good business for them to grant us an increase in the price called for in the contract, no doubt thinking that it would stimulate our drilling and installation of compressors and things of that kind, so as to give them a supply of gas when they needed it; that the maximum amount required to be delivered, as he recalls, was 20 million feet per day to each company; so he met with the officers of the Hope Natural [fol. 491] Gas Company and the Pittsburgh & West Virginia Gas Company, and they agreed to increase the rate called for in the contract for one year; after the expiration of that year another meeting was held in which they gave a further increase; that these meetings took place with them and he believes on all occasions the United Fuel was given an increase in the price over the previous year; that the supplemental contracts which he files expired on the 31st of July 1924 as to the increased price; that the gas being sold to the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company at the time he was testifying was at approximately the same price as that mentioned in the contracts; that there are no rebates nor

any concessions in the price nor any adjustments to be made hereafter with reference thereto; that the quantities provided for were being delivered to the Hope Natural Gas Company until the recent cold spell, when it was necessary to curtail the amount considerably; that the United Fuel Company was delivering practically 20 million feet a day until the cold days, when it was cut to about 12 million feet; that the supplemental contracts with the Hope and Pittsburgh & West Virginia company were made because those companies realized that the United Fuel Company [fol. 492] could not deliver the gas at the price mentioned in the old contracts; that he supposed the Hope Natural Gas Company needed the gas or it would not be purchasing 20 million feet a day and paying 22 cents for it, or in excess of 22 cents; that during the last year he has made contracts to purchase gas from smaller producers in the field; that the last contracts he recalls he paid 15 cents a thousand for the gas at the wells and agreed to spend approximately $120,000 in laying the pipe lines, and gave to the party with whom he contracted what he considered practically 1,000 acres of proven gas or oil territory; that that was mostly in Roane county, a small proportion in Wirt county; that it looks very much as if we will not be able to purchase gas at any less price in the future; that this is on account of the competition from the Hope Natural Gas Company and the Manufacturers Light & Heat Company, who are at present laying a twenty-inch line down through the United Fuel Company field and pay as high as 18 cents a thousand for the gas for the first year, which is to be increased in future years, and this is gas from which the gasoline is removed; that prior to this time he has been able to make contracts with producers in the field for 8 cents per thousand, with one-third of any increase which might [fol. 493] be received in the cities in West Virginia; that the contract to which he referred for the purchase of gas at 15 cents per thousand feet at the well, with some additional considerations, is on what is known as the Heck property in Roane and Wirt counties; that competition from companies in the northern part of the state offering about 18 cents per thousand for the gas compelled him to pay 15 cents per thousand, as well as the other considerations mentioned, which he considered better than 18 cents all told.

That he realized that he had competition that must be met if he was to remain in business, and thought it would be good business to purchase that gas even at a higher price; that up to the present time only one or two wells have been completed on the property, the first one being drilled in the neighborhood about a year ago; that he realized as soon as the first well was completed that he was going to have competition in securing the gas; that the other company was bargaining for it, and he was only successful in securing it through the transfer to the owner of this valuable gas or oil acreage, as they considered it, which is in close proximity to gas and oil territory and directly on a 45 degree line; that they evidently considered that more valuable than the 3 cents additional offered by the [fol. 494] other company; that 18 cents is as much as United Fuel Company secures for industrial gas in Charleston, and it couldn't pay 18 cents and stand the leakage and the big investment in compressor stations to transport it to the city, where it would be consumed; there would be about 5 per cent leakage and an enormous cost of distribution plant; that the increase in prices referred to by him is the direct result of other large gas companies coming into what has been known as the United Fuel Gas Company's territory to get gas; that in addition to the Hope Natural Gas Company, referred to by him, the Manufacturers Light & Heat Company, of Pittsburgh, have a line into Roane county at the present time, and they expect to get gas from the Ohio Fuel Supply Company, which, in turn, will get the gas from United Fuel Company or its territory; that the Manufacturers Light & Heat Company pipe line is possibly ten or twelve miles from the United Fuel Company's line; that he has known in a general way that the Manufacturers Light & Heat Company would be willing to purchase gas if the United Fuel Company could sell it to them; that he has had no dealings whatever in regard to building a line into Roane county, the negotiations having been all with the Ohio Fuel Supply Company; that the South Penn Oil [fol. 495] Company built a line from Minors down through practically all the United Fuel Company territory and are closing contracts for the purchase of gas, as well as transporting gas of their own production to the Hope Natural Gas Company at Minors; that these operations have been

conducted for possibly eight or nine months or longer; that he is not able to determine the price they are paying for the gas; that he was not present when the South Penn Company's representative testified that he was paying 8 cents; that he has been trying to find out what they have been really paying for it, but has been unable to do so; that he would judge that the statement of their representative was correct, however, but he does not know what quantity of gas that company has purchased; that they have an eight-inch pipe line; that there has been considerable activity since the construction of the above lines by the Hope Natural Gas Company and the South Penn Oil Company upon the part of other companies to acquire the outside production, with practically no results to anybody but the Hope Natural Gas Company, as they closed up contracts 100 per cent—in other words, all available gas has been secured by it, as it can afford to pay better than double what the United Fuel could; that the reason for this is that they could [fol. 496] double the price of gas in the northern part of the state and elsewhere; that about three-fourths of the United Fuel Company's gas production is disposed of to wholesale consumers, and the prices are the result of private negotiations or arrangements; that the United Fuel Company did not advise the Hope Company that it would not supply it with gas, nor intimate in any manner that it wouldn't fulfill the contract that it had, but the Hope Company knew that it would be impossible for the United Fuel to comply with it except at a great loss, and that they were receiving higher prices for gas in their markets, and on that account granted us an increase on the amount which they purchased from us; that from their markets in the northern part of the state and elsewhere they could no doubt make a profit at the price they are paying; that he was of the impression that the Hope Company had about 5,000 wells, but the Hope and the Reserve Gas Company are closely allied; that the figures of sales by the Hope Company of 59 billion cubic feet of gas, with its wells, in comparison with 47 billion feet by the United Fuel with 790 wells, are approximately correct.

That prior to the very active competition above referred to the contracts closed for gas in this territory were ap- [fol. 497] proximately at 8 cents a thousand; that the Hunt-

ington Development & Gas Company and the Columbia Gas & Electric Company are paying in that field 8 cents per thousand cubic feet, with one-third of any increase received in the cities of Charleston and Huntington.

That in regard to pumping water off of some of the sands, he would say that take all the gas wells, after the volume becomes small and the rock pressure declines, they begin to show water in the sand, and in some instances that necessitates moving a rig and tools and digging a pocket at least fifty feet in depth below the gas producing sand, installing a string of tubing and pumping outfit, which necessitates a gas engine or steam engine to operate it; that this water then must be extracted from the well through this pumping process where originally it flowed into the lines and was taken out through drips, which is quite a considerable increase in the cost of operation where you have water in the wells; that this condition is gaining considerably; that we are getting more and more of it as the wells become older; that the water feeds into the sands as the pressure is released, and the small amount of water that is in the sands feeds into the well, and this has to be removed or it drowns out the gas, and where it is in an [fol. 498] oil field the oil has to be removed or handled in the same manner; that he couldn't say that that condition is more pronounced in the Branchland field than in the Spencer or Clendenin fields; that the trouble in the Branchland field is with what is known as salt congestion on the tubing, which makes operation very difficult and necessitates the use of a swabbing machine to break that salt; that there is quite a bit of water there, but that he could not say it is greater in that field than in others when they get old; that he is installing quite a number of pumping outfits in the Spencer and Clendenin field; that the water comes in toward the well with the pressure that is behind it, although there are some instances where the casing is leaking and it is handled through a pumping outfit.

That on a previous hearing he testified that the gas available for industries would be less as the years went by, and that in cold weather there is very little gas for industrial purposes; that he does not think the reserves are double what they were when he testified before; that it is practically a physical impossibility, on real cold days, to get a supply

of gas that would take care of the domestic business as well [fol. 499] as the industrial consumers; that the United Fuel has facilities to transport the gas, but the supply on those days is not available; that on cold days the consumers in this state require the total capacity of the transmission and distribution lines; that if there were no consumers except those in West Virginia the lines would be ample to take care of it in most cases, and in some cases they wouldn't; in some cases the domestic and industrial could be taken care of, but in others he does not believe it could.

That the carbon black situation has entirely changed since he testified formerly; in fact, it is now entirely eliminated—that is, that at present prices carbon black could not be profitably made; that he understands there is an over-supply of carbon black on the market today; that he is familiar to some extent with the Huntington Development & Gas Company property; that he is a vice-president of the Columbia Gas & Electric Company, and also vice-president of Huntington Development & Gas Company; that the purchases of gas of the Huntington Development & Gas Company are referred to him; he has absolute charge of it; that the purchase of gas by the Huntington Development & Gas Company remains the same as it was before the Columbia Company purchased it; that it has made no contracts for more [fol. 500] than 8 cents and has had no negotiations on more than 8 cents; that in the Branchland field, to the best of his information, the price has never been more than 8 cents; that the cost to the Huntington company to bring the gas to the top of the ground possibly exceeds the cost to the United Fuel company; that the Columbia Company would have possibly more expense, on account of the age of the wells, and the gas in the Branchland field purchased by the Huntington Development & Gas Company and the Columbia Gas & Electric Company would not average quite as much per well as the United Fuel wells, although the cost is very close; that he does not know the difference in cost, but that he accepts Mr. Uebelacker's figures.

That the Huntington Development & Gas Company has its distribution plant in the city of Huntington; that it owns its administration buildings and its mains in the streets, constituting a complete distribution plant; that

the United Fuel Company also has a complete distributing plant in the city of Huntington; that the Huntington Development & Gas Company has practically all the industrial business in Huntington, the United Fuel supplying a small amount thereof in comparison with the Huntington Development & Gas Company; that the United Fuel Company has [fol. 501] about 70 per cent. of the domestic consumers; that he does not recall the number of domestic consumers, although he sees them often; that both companies have an organization for administration and distribution; that he could not even make a guess as to the number of farms in the Spencer pool or field which have not been drilled, nor could he do so in any of the other fields.

That there is a form of lease that is generally applicable to the United Fuel Company's entire territory; the average term of the lease is about ten years; that at times when it is not advantageous to drill a well the land owners are paid a well royalty by agreement—in other words, the same rental they would receive for a well if one was drilled, in order to prevent the lease from lapsing; this arrangement is made for extension of the lease for a period of five or ten years; that he does not consider the Mammoth field around Cedar Grove the largest producing gas area of all the fields per thousand feet per acre; that it is a very prolific sand, and is a little above the average, but that it does not compare with the Injun sand in Roane county, in his opinion, because of the longer life of the wells in Roane county; that the gas at Cedar Grove is in what is known as the Weir [fol. 502] sand, a shorter lived sand than either the Berea or Injun; that there are some extremely large wells in that vicinity, but the head goes off rapidly; that if he were buying gas acreage for a carbon black plant he would pay more for the Injun sand in the Roane county field than for the acreage at Cedar Grove; that this is based on the life of the well and the life of the sand, the total quantity of gas that will ultimately be purchased therefrom.

That for a short distance below Balls Gap the lines of the Columbia Gas & Electric Company and United Fuel Gas Company are parallel; that all of the system is practically connected up so that gas can be sent from any field to any part of the system.

Redirect examination:

That if the United Fuel Company cut off all of the wholesale consumers during the cold weather in times of peak load, that in most instances or some instances it could supply the industrial and domestic demand both in West Virginia; that he has information of contracts that the Hope Natural Gas Company is making in the field for the purchase of gas for 18 cents per thousand cubic feet; that he would prefer not to state the parties with whom it is made; that the quantity involved would possibly be two or three million [fol. 503] feet daily; that he tried to purchase that gas for the United Fuel Gas Company but was unable to get it because he could not pay the price; that he believes from several contracts he knows of that the price of 18 cents holds good, with an increase as the years go by.

That the line which the Hope Natural Gas Company is building into this territory is a twenty-inch line; that it is building but one such line; that assuming that it will build compressor stations to operate the line efficiently, it will carry approximately 75 million feet of gas a day, and that that would pretty well clean up all there is to get; that if the United Fuel Company were getting the price that the Hope Natural Gas Company gets when it transports the gas to Pittsburgh it could pay the same price and still make money.

That he files as part of his testimony a statement showing the amount collected on account of the minimum charge of 50 cents per thousand cubic feet, and the percentage that this is of the total collections for gas, marked Wallace Exhibit No. 3, and also a statement showing the amount of gas purchased during the year 1923 and eleven months of 1924 by the United Fuel Gas Company, with the names of the parties from whom such purchases were made, marked [fol. 504] Exhibit Wallace No. 4 (both of which statements are attached hereto as part hereof).

Recross-examination:

That it is true that if the United Fuel Company were allowed the same rate for which the Hope Company is selling gas he would be able to pay similar prices for gas; that it is not true that three-fourths of the United Fuel Gas is

under its own control and upon which it can fix the price at which it can sell it; that it has contracts with wholesale consumers which contain an obligation which must be recognized; that the commission has nothing to do with that, nor does the consuming public; it is a part of the wholesale contracts which the United Fuel Company is obliged to fill; that these contracts were voluntarily entered into by its predecessor; that he supposes the contracts were entered into voluntarily, and that at the time when these contracts were made they were all right, but it was a case of bad judgment and they are not now profitable contracts; that this is not the only reason however, that the United Fuel Company cannot compete with the Hope Natural Gas Company and other competitors; that it is true that taking gas at 15 cents per thousand it is losing money, but that if the United [fol. 505] Fuel had what it considers an adequate rate for gas in West Virginia it would probably be able to meet the competing companies; that the United Fuel Company does not sell gas at wholesale for less than 15 cents; that it is true that its contracts with the parent companies are at a less rate, but that the agreement with the parent companies is not a price figure on the purchase of gas, and they are not the contracts which he refers to as unwise; he is referring to contracts with the Louisville Gas & Electric Company and the Central Kentucky Gas Company, both of which extend over a number of years; that in the case of the Portsmouth Gas Company the contract had expired some time since, but that during one spell of cold weather he permitted them to have gas; that the Louisville Gas Company gets from six to ten million feet a day on a cold day; that they do not take any gas during the summer; in other words, the United Fuel only takes care of their cold weather needs, and that is the bad feature of the contract.

That he would much prefer not to have the contracts with the Hope Natural Gas Company and the Pittsburgh & West Virginia company; that if this gas was not bound up by those contracts he is sure he could get more money for it; that the Manufacturers Light & Heat Company [fol. 506] would pay a better price for it; that the contract with the Hope Company will be out in 1926 unless there are other arrangements made; that it is true that a very substantial part of the output of the United Fuel Company

goes to the two parent companies, and they, in turn, sell it to domestic consumers at a very much advanced price over the prevailing price in this section of the state.

That at the present time the Heck wells heretofore referred to by the witness are securing about a million and a quarter feet a day; that he does not know how much gas was secured by other companies which he was unable to get because he could not pay the price demanded, but would not be surprised if it did not run to twenty or thirty million feet a day; that a considerable portion of it is gas that has been developed for some time; that he is buying it now for the United Fuel Company, but it will be taken away as soon as the Hope line is in; that it is purchased by the United Fuel Company on a short term contract because it could not afford to pay the price except in winter time; that the amount of twenty or twenty-five million feet a day is merely a guess; that he knows the Hope company is purchasing gas from all the carbon people, the South Penn, and Carter Oil Company, so that no doubt it gets quite a [fol. 507] bit of gas; that there has been no time at which he could buy this gas at 8 cents or less; that the leakage in a pipe line for the distance from Branchland to Huntington, if it was the United Fuel Company's lines, would be possibly one per cent; if it was somebody else's possibly three per cent; that he thinks the United Fuel Company takes better care of its lines than other companies; that he does not think it would be much over one per cent; that the loss in the distribution lines runs anywhere from 5 to 20 per cent in some places that he knows of; that the line leakage depends a good bit on what kind of pipe is used; that in a screw pipe there is much more leakage than in a dresser joint put together with rubber couplers; that in a screw joint line every joint will leak; that whether more than 5 per cent. would be lost would depend altogether on the kind of pipe and how it is kept up.

That it is a difficult question to answer as to what time it will take to exhaust the proven and probable areas owned by the United Fuel Gas Company; that you take in Mr. Davis's report the figures of available supply of gas still remaining in the territory known as proven and operated acreage; there is still a certain amount of gas underlying that acreage, and it would depend on the length of time it

[fol. 508] would take to deliver that to market; it could be easily figured out on that line. While I think Mr. Davis's judgment in regard to that has proven rather conservative, I am still of the opinion that it is a very fair estimate. I think it would take a longer period than eighteen years to market the gas. It would depend a great deal on how the property is operated and, of course, the amount of gas taken out each year and a lot of other factors, but he believes that it will take a longer period than eighteen years; that he does not make the statement that he will be able to sell that amount of gas for eighteen years, for as you reach the twelfth, thirteenth and fourteenth years you will have to sell it in much smaller amounts and it will be stretched out over twice that period of time; that he would not care to hazard a guess as to the length of time it would take; that the whole thing is a matter of judgment, and that in his opinion there is going to be a considerable amount of gas for a number of years; that if you increase the amount extracted it will cut down the number of years it will take to extract it, so that the rate at which the gas is extracted has everything to do with it, so that in his judgment the proper way to compensate for the gas is to pay [fol. 509] for the particular unit as it comes out; that in speaking of the 663 billion feet Mr. Davis used for the amount of reserves he meant that this was the minimum amount; in other words, he believes that his report is very conservative; that there should be at least the amount of gas he estimates, and he believes there is considerably more.

J. A. Peirce testified in substance and effect as follows:

That he lives in the city of Huntington and has lived there for four years, is engaged in the production of natural gas and has been so engaged during the last four years in West Virginia; that he has had occasion to construct and provide a plant for the production and distribution of natural gas in West Virginia in Mingo county, and that he kept a record of the cost of the various items of construction going into the plant and of the items of overhead actually spent in the construction of it; that he has made up a statement showing these various items of cost of con-

struction, including overheads, and files the same as part of his evidence, marked Peirce Exhibit No. 1 (which is attached hereto as part hereof).

[fol. 510] Cross-examination:

That the authorized capital stock of his company is $3,000,000.00, and its headquarters is at Huntington, West Virginia, and it is incorporated under the laws of the state of Delaware; that all of the capital stock was paid in for leases and property; that he does not know how much of the stock was actualy paid for in money; that some of the stock is held in Huntington, some in New York, some in Butler, Pennsylvania, and all over the country; that he is not prepared to say how much money was paid in for the stock; that the item of engineering and superintendence, $13,511.38, equal to 3.66 per cent., covers a period of two years, included in which was the salary of engineers and the salary of men doing the work and one-half of the general expense of the office; that the organization was Mr. John Young, Mr. George Cox, Mr. George Johnson, and V. B. Lamb, who were the superintendents building the plant at Breeden; that in addition to this there were several miles of line made; that the $12,659.74, expense of administration, covered by traveling expenses, general office expense, postage and so forth; that the traveling expense is for the men going to raise the money, contracting for the different [fol. 511] wells, and different meetings where they were held around the country; that the directors' meetings were at one time held in New York and later changed to Huntington; that the item of interest on physical property, $41,226.97, is the interest on the $368,000 of money in connection with the construction of the property; that it began on the first of April two years ago, and was all paid in after the first year; that he did not have the whole $368,000 at the beginning; that he had a few gas wells out in Mingo county and an old pipe line; the year after that he had a pumping station complete and a new pipe line and four wells drilled; that these improvements were made from a bond issue.

That the item "pre-construction costs" covers two years, the principal part of which is the first bond issue; that

covers the expense of the Superior Oil & Gas Company, which was purchased, and legal expenses for searching the title, the appraisal of the American Appraisal Company, the geological report, maps, and so forth, and the expense of the New York office, legal expense; $14,796.33 is the expense of the New York office and expenses incurred in the purchases of the new properties and in searching the title.

That his company has 14,000 acres; that the production [fol. 512] is five million feet a day at the present time, which is sold to the United Fuel Gas Company and the Columbia Gas & Electric Company; that he does not think it is necessary to maintain a New York office and a Huntington office for such a company as his; that the first bond issue was in April 1922; that the next one was in 1923 on the first of May, $600,000.00, out of which the first one of $250,000.00 was retired; that there are no others; that the rate of interest on the bonds is 7½ per cent.; that the cost of financing, $25,887.43, represents the printing of bonds, recording the deed of trust, and the insurance policy that was made in favor of the bondholders, amounting to $2,852.50, $20,000.00 allowance to Mr. John E. Mahan for taking up the first $250,000.00 in bonds; he was given a premium of $20,000.00, these bonds being callable at 105; that he does not know how much capital was paid in at the time of the issue of the first bonds; that it is true that all of the capital used for the development of the property came from bond issues; that he would not say that such a company as his could be compared in the matter of getting money with one as strong as the United Fuel Gas Company.

[fol. 513] J. C. Blair testified in substance and effect as follows:

That he lives at Charleston, West Virginia, and is engaged in the oil and gas business, and has been so engaged since 1911; that he is connected with the Monickel Gas Company, the Commercial Gas Company and the Gas Producing Company, all of which companies produce natural gas and sell it to consumers; that all of the gas produced by the Monickel Gas Company is sold to the International Nickel Company at Huntington, a company engaged in the

production of nickel and monel metal; that this company is using now at the rate of about 100 million feet a month; that his company sells gas to the International Nickel Company at 20 cents a thousand, and that in two years from the time they started selling it, that is, about 1½ years yet, it runs to 23 cents, and two years after that it goes to 25 cents; that the gas is delivered at the Huntington plant, and costs about 2.8 cents a thousand to deliver it, the length of the transmission line being about 15 miles, and it being an 8 inch line; that he has bought gas in the field and paid 12 cents for three years and 15 cents for the next three years on a six-year contract, which was in Lincoln county; [fol. 514] that under his contract with International Nickel Company he has the right to extract the gasoline from the gas before delivering it.

Cross-examination:

That the Monickel Gas Company was organized in August 1923; that the date of its contract with the International Nickel Company was August 3, 1923; that the company was organized August 1st, 1923, and the contract made August 3; that the negotiations for the contract were carried on before the company was actually organized, and extended over a period of perhaps sixty days; that at the time these negotiations were going on he had under his control leases on about 2,500 acres of land located in Cabell county out on Mud river; some of it he paid $7.50 an acre for, some of it $5 an acre, and some of it $10 an acre—very little at $10 an acre. The Commercial Company also had some acreage at that time that it sold to the Monickel Company; two wells were drilled when the Monickel Company took it over. His company agrees to deliver a minimum of two million feet a day to the International Nickel Company; that it has drilled fifteen wells, having approximately an open flow of 8½ million feet a day; that this furnishes a supply of gas adequate to take care of the contract for the [fol. 515] present, but that he realized that it would not furnish a supply sufficient for the life of the contract; that to do this would require the drilling of additional wells; that the territory that it has is capable of having drilled additional wells thereon; that the acreage taken over, in addition to that above referred to, was procured some of

it for $25 an acre, $10 and $15 for some of it; that these figures are not for the gas rights in fee, but simply leases; that the development of the property has not been a disappointment to him; that the acreage was paid for in stock of the Monickel Company; that the additional acreage was held by the Gas Development Company; that a man by the name of Zogg conducted the negotiations for it; that the leases were dated 1920, most of them; that he took these leases up in 1920, and had them at $1 a year rental; that he does not know whether anything else was paid for them but the rental of $1 a year; that some of the officers of the Monickel Company were interested in the Gas Development Company; that they got their stock through the Gas Development Company; that the Gas Development owned this property and the Monickel Company took it over; the Monickel Company gave stock for the leases that that company turned in to the Monickel Company; then when the Monickel Company was formed the main stockholders [fol. 516] of the Gas Development Company were made officers and directors of the Monickel Company, and the same way in the Commercial Company.

That he considered that the price paid for the leases at the time was a fair price therefor in stock; that the market price of gas leases in that territory depends on the location; that it is well developed and you know what you are going to get; anywhere from $10 an acre up to $50 or $100; that he knows of people who would like to have the acreage at those figures, but it is all under lease by larger companies; that he has not heard of the larger companies paying any such prices.

That the Monickel Company began to supply gas to the International Nickel Company the first of January 1924, and that during the year 1924 it supplied around 700 million cubic feet; that it has supplied gas to no one else during that time.

H. G. Scott testified in substance and effect as follows:

That he lives at Nitro, West Virginia; that he is vice-president of the United Fuel Gas Company and has been [fol. 517] such since May 1922; prior to that time he was vice-president and general manager of the Virginian Power

Company, operating in this vicinity, engaged in the business of producing power in wholesale quantities and distributing it to consumers—that is, electric power.

That he had made comparisons and observed facts as to the relative values of the use of natural gas and other fuels for steam purposes, and testified as follows in regard to his observation and experience in regard thereto.

In the case of the Virginian Power Company, we built a plant with the idea of using coal which would cost us net about a dollar a ton delivered at the plant. Shortly after we started operation the price of coal started to rise. We endeavored to secure fuel which would, if possible, lower our cost of operation against the rising price of coal. We were able to secure from a carbon black company near Cabin Creek Junction gas at an even rate per day and per 24 hours. The total amount of gas which was furnished was approximately slightly in excess of a billion feet a year. At that time, gas was selling at 5 cents per thousand under those conditions. Of course, at that time, for some reason, they were ceasing to manufacture carbon black. [fol. 518] Shortly after that the gas price started to rise, and that made necessary very careful study and experiments to determine the relative value of those two fuels in that plant. The coal which we were using had been determined to have an average of 13,000 B. t. u. per pound of coal. Comparing the thermal content of the natural gas, we took 1100 B. t. u. per foot of gas although in certain localities in this section the B. t. u. content is slightly higher than that. A ton of 2,000 pounds of coal would therefore have 26 million B. t. u. Dividing by 100, you will get approximately 24,000 feet of gas, this being equal to a ton of coal on the basis of the calorific value only. We determined that where gas is burned to manufacture steam and coal has not been used and it is not intended to use it, the saving in initial cost of installation, due to the fact that you do not have to build storage bins, coal elevators, coal bunkers, crushing machinery, tracks, ash equipment and elevating equipment, amounted approximately to $12.00 a horse power of boiler installation in that plant at the time the tests were made, when costs were very much lower than they are today, that being approximately the year 1914 to 1915, and the plant was built on costs obtaining in 1912 and 1913. We

[fol. 519] then found that by actual operation it cost us over $4.50 per annum per horse power to fire the boilers with coal. It cost $1.50 per horse power to do so with gas. We found that the maintenance of stokers in that plant were averaging us 80 cents per horse power per annum. The maintenance of the gas burning equipment averaged 30 cents per horse power per annum, or a saving of 50 cents. So that without taking into consideration the fact that in the use of the fuel in the boiler, its efficiency is 100 per cent as compared to coal at 85, or, in other words, gas is approximately 15 per cent. more efficient than coal under those circumstances, but not taking that into consideration and merely resolving these financial credits in favor of gas into terms of feet used, we found that the equivalent of a ton of coal of 13,000 B. t. u. to the pound was 18,000 feet of gas. In other words, putting it in dollars and cents, 18,000 cubic feet of gas, if it was charged for at the rate of 25 cents, would be equivalent in the plant, without taking into consideration the increased efficiency due to the use of gas, would be equal to $4.50 coal delivered at the plant. Now, of course there is a plant where the baser fuels can be used, but where you come to a plant that you cannot have sulphur, where the application of the heat is direct [fol. 520] and the affinity, the article being heated might have an affinity for sulphur, for instance, the value of gas for that industry goes higher, as is proven in this case which I have a good deal to do with. The American Rolling Mills Company, Middletown, Ohio, who are in the steel business, and who manufacture gas in large quantities by producer plants for their heating purposes, which are special, require 800 million cubic feet of gas per annum and pay 45 cents for it; and pay that amount in the face of the fact that frequently their service has to be interrupted during the winter, which gives, of course, a true gage in an unregulated market of the value of the gas at that point and the service, because that is a contract which is in existence now.

On the question of domestic use of fuel there has been a conservation program carried on by the Department of Mines of the United States Government and the chief endeavor on their part has been to educate the householder to conserve gas and in order to do so they have had tests made, one of which was made under the supervision of the

Buerau of Home Economics of the University of Ohio. Those tests were to show the different efficiencies of different fuels. The record of that test, which I have here, [fol. 521] published in an official bulletin, is based of course upon a price of gas that we don't know anything about, so we would have to make allowance as we go, because the price of gas that they used for their calculations was dollar gas. They show in a test carried on June 7, 1917, where they cooked a breakfast for six, identical articles, but used natural gas, soft soal, coal oil, gasoline and electricity as fuels, that it took ten cubic feet of gas to cook the same meal that was cooked with 10.1 pounds of coal, 1.1 pounds of coal oil, .9 pounds of gasoline, and one kilowatt hour of electricity; using electricity at 3 cents per K. W. H. was the cost, coal at $6.50 per ton, natural gas at a dollar per thousand cubic feet, coal oil or kerosene at 15 cents per gallon, and gasoline at 27 cents per gallon, the fuel cost was one cent for natural gas, 3.45 cents for soft coal, 2.5 cents for kerosense, 3.6 for gasoline, and 3 cents for electricity. However, if natural gas at 20 cents had been used as the basis of course it would only have been two tenths of a cent for cooking that breakfast and the other figures would have remained the same.

They determined at the same time the comparative efficiency of these fuels on a basis of considering electricity [fol. 522] in that case as 100 per cent. efficient, which they state, and we know, is not actually true, but it is pretty near 100 per cent. as compared to the others. In that case, gasoline was only 20 per cent. as efficient as electricity, kerosene 16 per cent. as efficient, coal 2.6 per cent as efficient, natural gas was 34 per cent. as efficient. The efficiencies vary at another meal where it might take a longer or shorter time to cook it. The relationship of costs which I have given follows through all of the tests which they have made. Of course there are a number of reasons why that would be true but this bulletin is based solely on the question of costs and efficiency.

In the making of these tests, they adhered very closely, of course, to a scientific basis. They did do this: that coal had to be lighted before breakfast was started, or whatever meal they were testing, but incidentally, when the meal was finished, they permitted the fire to die out, whereas the standby losses in fires of that kind usually carry for a much

longer period. The value of convenience in this case was not considered. It is obvious and evident that it is more convenient to light a match than it is to haul up coal in a [fol. 523] scuttle and shovel it in and take out the ashes and shovel them out and have the ashes collected; and yet in spite of the fact that this service that is rendered by natural gas is so much more efficient, convenient and cleanly than coal, which would be the cheaper fuel, the price comparison shows that it is sold at vastly less than the cost of coal.

Some time ago I endeavored to ascertain the cost of coal in this community delivered at the houses. It is difficult to obtain in Charleston because nobody uses any coal to speak of. In Bluefield, where we went into eight or nine houses, we found that coal costs as high as $9.00 a ton delivered in the house. That was compared with the cost of two or three dollars at the mines. That is the only community that compared in this section of the state with Charleston or Huntington, as I could see it. A town like Beckley was not of value for comparison because it was neither as large nor were the difficulties of getting coal in the houses in Beckley similar to Charleston. Bluefield is in the heart of the coal fields and with that demonstrated cost it is safe to assume that the cost of coal delivered in the houses in Charleston would not be less than the $6.50 given in these tests and on the basis of these tests, with coal costing, [fol. 524] for the breakfast of six, 3.45 cents, and natural gas at a dollar costing a cent, or, based on the price we have here, natural gas would have cost two mills, that is, 34½ mills coal costs, or 1/17 of coal at $6.50 per ton.

This reflects industrially and in domestic service the result of my investigations in the value of such service.

The bulletin referred to is entitled, "Tests of Relative Costs of Natural Gas, Soft Coal, Coal Oil, Gasoline and Electricity for Cooking, Made by the Department of Home Economics of the Ohio State University, Columbus, Ohio, June 1917, and reprinted in October 1918, January 1920 and April 1920."

Cross-examination:

That he was not interested in making an investigation in Charleston to determine whether coal ever sold for $6.50 per ton; that he did not go to any dealers to ascertain the

price, as he was not interested in it; that the Columbia Supply Company furnishes the gas to the rolling mills at Middletown; that it is a subsidiary of the Columbia Gas & Electric Company; that the price of coal at Middletown, Ohio, was slightly in excess of what they are paying at Cincinnati; as compared to $3.83 in Cincinnati there was [fol. 525] an additional cost when using Kentucky or West Virginia coal of about 50 cents in freight; of course, their coals came from this section, so that the coals shipped from West Virginia to Middletown cost approximately $4; Middletown is located between Dayton and Cincinnati; that he could not find in Charleston at the time he made the investigation referred to any distribution of coal that would give any real idea of cost; that it is not fair to take the cost of one ton either for or against the proposition, and that there is practically no coal used here for domestic purposes; that the cost of coal for industrial purposes in Charleston would have to bear the freight rate, which he thinks is 85 cents, added to which would be the cost of the coal at the mine, and added to this the cost of distribution; that if coal was selling at $2 at the mine for lump, which would be the domestic coal, and this 83 cents freight rate, you would have $2.83 in carload lots, and then you would have to find out what the cost of distribution was, but for the sake of argument, taking no cost of distribution and taking the cost of coal at the mines in the mines as 17 cents, and taking the freight as being 80 cents, and delivering the coal at the house at $1 a ton, the cost of gas for the same [fol. 526] purpose at the present rate would be two mills as against a little over five mills for the same service rendered by coal, or less than half the cost of coal if it only cost a dollar a ton.

That he did study, of course, the question of deterioration of property in the house by the use of coal, the cost of moving ashes, inasmuch as most of the coal which is used has a theoretical ash content of eight or nine per cent, but actually will run up to 15 or 20 or 30 per cent in domestic consumption, which means that 30 per cent of the coal you take in has to be hauled away either by the individual or the community. Those two elements, plus a third one, the injury to property from smoke, against which laws have been passed, have to be considered. It is a known fact that the real mar-

ket for anthracite coal has been made as the result of statutes preventing the emission of smoke from chimneys in eastern communities. The cost of smoke in Cincinnati has been so great as to cause the civic associations to make estimate of losses there and to do everything possible to prevent it, and they now have smoke inspectors; that the painting of houses in a community would also be an element; and being asked whether laundry and soap, an additional [fol. 527] amount of soap being bought to keep your hands clean by reason of smoke, would not be an element, he replied that all of these things had to be taken into consideration.

Redirect examination:

That he is acquainted with the per capita consumption of natural gas in the cities where it is used as a fuel—that is, the consumption per consumer; that in the United Fuel Gas Company's service in the year 1924 the average consumption per domestic consumer was 184,000 cubic feet; that in the city of Columbus in 1923 it was 112,000 cubic feet; that the temperatures in Columbus in the winter time, which is the only temperature that matters, is approximately 4 degrees colder than Charleston; that the average consumption per consumer in Cincinnati was 78,000 cubic feet in the year 1923, or considerably less than half what it was in Charleston, and that there is very little difference in the temperatures between Cincinnati and Charleston; that in Dayton the consumption per capita is only 70,000 cubic feet. As the rate went up in these cities the consumption went down. The average annual bill remains about the same; there is very little difference. There will be a sudden rise in the bill when the rate goes up, and then the [fol. 528] adjustment in the use of gas takes place and the bills come down as the adjustment is made; that has been the experience in Cincinnati. In the city of Dayton it is the historical experience; and in Columbus as the rate goes up the gross bill does not increase to any appreciable extent.

M. S. Fouts testified in substance and effect as follows:

That he lives at Charleston, West Virginia, and is secretary and assistant treasurer of United Fuel Gas Company; that as of December 31, 1924, that company had 35,704

domestic consumers in West Virginia; that the average bill for each consumer in West Virginia for the year 1924 was $39.49; that as of December 31, 1923, it had 33,908 domestic consumers in West Virginia, and that the average bill for each consumer was for that year $38.47.

Cross-examination:

That as of December 31, 1923, there were 84 industrial consumers in West Virginia, and on December 31, 1924, 56; that the consumption of gas for the 84 industrial consumers in 1923 was 4,866,454 thousand cubic feet, and for 1924 the industrial consumers used 2,849,224 thousand cubic feet.

[fol. 529] STIPULATION RE CERTAIN FACTS

It was stipulated by the parties that for the year 1923 the United Fuel Gas Company paid dividends of 5 per cent on its capital stock of $30,000,000.00, and that for the year 1924 it paid dividends of 4.8½ per cent on its capital stock of $30,000,000,000.00.

DILLON C. JAY testified in open court in substance and effect as follows:

That he lives at Charleston, West Virginia, and is acting land agent for the United Fuel Gas Company and has been connected with that company for the last twelve years in its land and leasing departments; that he has made up a statement from the records of the company showing the gas rights and the title by which that company holds them, the number of acres, the county in which that acreage is, and the obligation under which the company is in regard to each of those tracts, and files the said statement as part of his evidence, marked Exhibit 3 J. C. No. 1 (and the same is attached hereto as part hereof).

That the United Fuel Gas Company owns the gas in fee as shown by the first page of the exhibit under the head-[fol. 530] ings "Unoperated Fee Gas Acreage held by United Fuel Gas Company" and "Operated Fee Gas Acre-

age held by United Fuel Gas Company;" that the statements under these headings show the number of acres in each county held in fee by the United Fuel Company, both operated and unoperated, and show a grand total of 41,555.07 acres owned in this way; that means that the company owns the gas in the land—the oil and gas.

The second page shows unoperated acreage held under leases at a rental of 25 cents per acre per annum, and it is subdivided into the number of leases, the aggregate number of acres held under the different royalties, running from 50 cents to $3 per acre. The 25 cents an acre rental is the amount paid to the land owner for the leases up to the time it is operated. Twenty-five dollars to $300 a year rental means the royalty which is paid to the land owner for each and every well after the same is drilled; that when a well is drilled producing gas, or from which gas is marketed, ordinarily the land rental stops and the rental paid on the well takes its place; that the rental is paid only on producing wells and not on dry holes, should such be drilled.

[fol. 531] That on the next page is "Unoperated Acreage held under Leases at Delay Rentals, Rentals of 50 cents an Acre," under which is included various leases in each county and at various gas well rentals. This is subject to the same explanation as the other page, except that the delay rental is 50 cents instead of 25. And the statement goes on to the end at the various increases in delay rentals and acreage rentals until you get over to the page headed, "Unoperated Acreage held under Lease at Delay Rental of $100 per Tract." In that case the delay rental, instead of being by the acre, is for the whole tract, the amount paid for delay in drilling being a gross sum instead of by the acre. All of these figures for delay rentals are annual payments. Then there are certain pages upon which are indicated that certain amounts are paid per acre for delay rentals, being 50 cents per acre, $2 per acre, $5 per acre, and a certain number of cents or fractional parts of cents per thousand cubic feet as well royalties. Some of the leases provide for annual rental at a specified sum per acre, the royalty being based on the measurement of the gas. The only difference in these cases is that after a well is drilled the amount paid by the company is based on a certain number of cents [fol. 532] for the actual number of thousand cubic feet pro-

duced, instead of being based upon the well as the unit of payment.

There are then two pages upon which appears "Acreage Held in Lease without Rental on account of Oil Production" and the other "Operated Acreage held under lease on account of Gas Production." In the first instance the leases are for both oil and gas production, and there having been oil production on the leases, the payment of the stipulated oil royalty stops the delay rental; that sometimes oil and gas are both produced from the same well and from different sands in the same well, but when the lease is for gas and oil the production of either stops the dead rental. The other sheet indicates that the acreages are held without delay rental because of production of gas, and it also indicates the amount per well that the company is paying.

That by far the larger amount of acreage is that upon which a dollar per acre is paid for delay rental and $300 for a gas well; that in the years past this was the customary rate upon which oil and gas lands were leased, and that accounts for much the larger amount being of that character; that he is familiar with the forms of leases used by [fol. 533] the company and by oil and gas lessors generally and has been for the last few years, and that he produces and files with his evidence as a part thereof such forms of leases as are in use by the United Fuel Gas Company, Hope Natural Gas Company, South Penn Oil Company, Fisher Oil Company, Carter Oil Company, the forms in general being the same. Said representative forms of leases are filed as part of the witness's evidence, marked Exhibit 3 J. C. No. 2 (and are attached hereto as a part hereof.)

Cross-examination:

That none of the land indicated on the first page of Exhibit 3 J. C. No. 1 is used for compressor stations, rights of way or other purposes; that it is all gas acreage; that he has not included any land owned in fee for rights of way, and nothing for land owned for compressor station lots; that it is owned in fee; part of it is operated and part of it is not operated; that the forms which he files are forms of leases used by the United Fuel Gas Company upon which its leases have been taken in the main during the past ten

or twelve years; that it holds under leases 819,861 acres; that he does not know just what quantity has leases similar to the forms presented, that in the main, however, the [fol. 534] leases don't vary very much, even on large tracts of land, sometimes special clauses being put in where the land is being operated for coal or where it is coal land, making provisions for going through coal seams; and some of them have minimum royalty clauses; some of them have different forfeiture clauses, and some have the right to surrender portions of the premises under lease, and in some of the larger tracts, as well as in some of the smaller, the royalty is based on so much per thousand cubic feet instead of by the well; that it has been found necessary in some cases recently to take leases of this kind rather than by a well rental, but not in very many cases; that sometimes there are some interlineations made, but as a rule the leases are taken substantially upon the form indicated; that the form is the form the company submits to the land owner, and he is generally willing to sign the contract; and in the great bulk of the acreage the parties come together on the terms indicated in the leases.

Redirect examination:

That the statement introduced by him in evidence shows that the company owns 41,555.07 acres of gas lands in fee, operated and unoperated, on which no royalty is paid to anyone; that it has 83,632 acres under lease which is operated, and 566,221 acres under lease which is unoperated, [fol. 535] a total of 691,409.49 acres; that the reason the figures given by him are less than those formerly indicated in the record as 819,000 acres is because his figures do not include 128,451.85 acres held in Kentucky, but only the acreage held in West Virginia, the total of such acreage being 691,000; that the practice of the company in regard to renewing or attempting to renew leases for gas territory before the expiration of the term provided in them is to undertake to secure such renewal or renewals from twelve to eighteen months before their expiration and that the reason that this is done is to enable the company, in case it is not able to secure the renewal of the lease on terms it is willing to accept, to drill a well or wells on the property and in that way continue to hold the territory.

Cross-examination:

That none of the printed forms of leases which he filed with his testimony contain a covenant on the part of the lessee to drill any certain number of wells; that the United Fuel Gas Company has very few such leases; that he doubts whether there are more than one half dozen such leases on the company's books; that it is not true that nearly all of the leases for large boundaries contain such a covenant, nor is it true that nearly all of the leases for large bound- [fol. 536] aries contain a forfeiture clause; that he does not believe any of them do; that he does not know whether he has read the contract for the lease of the Courtney tract of land in Lincoln and Boone Counties, containing upwards of 10,000 acres, taken some ten or twelve years ago; that he has read the contract for the lease of the Campbell Coal Company tract some five or six miles above Charleston, containing about 5,000 acres; that they contain clauses providing for the drilling of a certain number of wells on the acreage after operations start; that it is true that where the company leases large boundaries of land the terms are matters of negotiation between the parties and the contracts contain many other clauses not contained in the printed forms.

TESTIMONY FOR THE DEFENDANTS

JOHN JIRGAL testified in substance and effect as follows:

That he is connected with the firm of Arthur Anderson & Company, certified public accountants, which has offices in Chicago, New York, Kansas City, Milwaukee and Washington, and in the New York Office has a department which confines itself strictly to public utility work, and also a [fol. 537] similar department in the Chicago office; that he was connected with the Railroad Commission of Wisconsin from 1910 to 1916 in the accounting and statistical department; in the latter year he became associated with Hagenah & Erickson, public utility engineers and rate analysts, and continued with them until 1920, except for the period of the war—that is, the period when he was in active service; that he became associated with Arthur Anderson & Company in

1920 and has been there ever since and is a member of that firm, which does a large number of public utility investigations and audits for the purpose of selling public utility properties, for the financing of the same, for internal administrative purposes, and for these rate adjustments; that the firm audits annually some of the largest public utilities in the United States, such as the Northern States Power Company, which operates in Minnesota, Wisconsin, North and South Dakota and Iowa, the Consumers Power Company, which operates extensively throughout the lower peninsula of Michigan, the Louisville Gas & Electric Company, which operates around Louisville, in Kentucky, and the Republic Railway & Light, which operates in Pennsylvania and Ohio, at Youngstown, New Castle, and that region; the Cuban Telephone Company, which operates [fol. 538] throughout the Island of Cuba, and a number of other large companies; that he has been connected personally with such cases as the New York Steam case, Chicago Telephone Case, the Chicago Gas case, the Dayton Power & Light, the Richmond Water & Gas, the Birmingham Telephone, Louisville Telephone, Lincoln Street Railway, Indianapolis Water case, East Chicago Water, Peoria Gas, and these West Virginia natural gas cases and the natural gas case in Topeka, Kansas, the West Virginia Telephone cases, Huntington Water case, and others; that his firm does the initial investigating work for some of the largest banking institutions in the country, going into the properties usually before financing takes place, and also goes into investigations of properties for purchasers, in the case of some of the larger organizations.

That he has examined the books of the United Fuel Gas Company and has made studies and analyses of accounts of that company; that he was in the United Fuel Gas Company investigation in 1919 and the present investigation; that the present investigation covered a period of three or four months; that he has made a study of the exhibits filed by Mr. Uebelacker and Mr. Hightower with their evidence in this case; that he has made a study covering the investment [fol. 539] as reflected in the property of the United Fuel Gas Company, and that the same is signed by "Arthur Anderson & Company, certified public accountants," which is the firm of which he is a member, and which report was

made by him, and which report he files with his evidence as a part thereof, marked Jiral Exhibit No. 1 (which is attached hereto as part hereof).

In explanation of said exhibit the witness stated:

The amount of the original costs, subject to some qualifications which will be explained later on, is $26,288,911.83. I wish to explain at the outset that the investigations which we have made heretofore covered only the United Fuel Gas Company, and in the last instance the Virginian Gasoline & Oil Company. This time we have treated the property on a consolidated basis, and have included with the United Fuel Gas Company its gas subsidiaries, the Cabin Creek Gas Company and the Warfield Natural Gas Company. I want to make that explanation, so that any differences between the figures for prior years and those contained in this report, that will be the reason for them—the reason will be obvious.

The report that we made in this connection in other words, this Exhibit 1, was for the purpose of ascertaining [fol. 540] the original cost of the present property in use. It was also for the purpose of determining the net earnings available for the natural gas business, and the distribution of both of these factors between the various divisions of the company's business.

On the books of the United Fuel Gas Company the property account is shown to amount to $74,069,215.83; that is for the United Fuel Gas Company, the Cabin Creek Gas Company, the Warfield Natural Gas Company and the Virginian Gasoline & Oil Company. For the purpose of convenience, we might term the last three companies subsidiaries, although in the strict sense the Virginian Gasoline & Oil Company is an affiliated company and not a subsidiary.

The total investment of $74,000,000.00 is divided between the different branches of the United Fuel Gas Company and subsidiaries' business as follows:

The natural gas is charged with	$59,636,100 00
The gasoline, including tank car	1,750,302 00
The oil	12,449,910 00
The carbon black	113,868 00
Then there is an item of incomplete construction included for	119,034 00

Now, the book value of the natural gas property is made [fol. 541] up as follows:

There is $27,511,797.00 which can be designated, for the purpose of this report, as the book value of the original properties acquired, plus the additions and extensions since the acquisition, stated at cost reflected by the books; value added through appraisal is the other item and amounts to $32,124,303.00.

Now, there is a slight difference between that figure and the $31,000,000.00 that has been introduced in the previous hearing, due to the fact that the Cabin Creek Company is included.

That this appraisal of the acreage was put on the books of the company in 1918; that he thinks the appraisal was made later than that, and that the books were held open and the appraisal put on as of that date; that he was instructed to find as closely as he could the original cost of this property, and for that reason excluded any appreciation; that is, he has excluded the $32,000,000.00 to arrive at the original cost per books; he has also from the per books figures excluded three other items and added back one; he has taken from the acreage account the proportion which he feels should be assigned to the oil department, and also has taken from that what is termed by the com- [fol. 542] pany "financing improvements and betterments," and also an account called "depreciation and adjustment," and has added back the item of incomplete construction; that the item of depreciation and adjustment is excluded for the reason that the property is no longer in service; $413,182.00 is cost of dry holes, $283,759.00 surrendered acreage, and abandoned wells amounts to $29,776.00, and some miscellaneous items amounting to $29,882.00, and for the reason that none of this property is now in use it is excluded. The item of financing and improvements is made up of discount on bonds, $191,225.00, certificates for fees in connection with bonds, $1,947.00; the listing of the bonds on the exchange, $610.00, and then there are some unaccounted for items amounting to some two thousand and odd dollars. These items are excluded for the reason that the usual rule in a case of discount and expense is to treat this as a deferred charge and to write the same off over the life of the securi-

ties. That is the accounting treatment provided in the uniform classification of accounts of every public utility commission so far as he knows. These items are merely interest paid in advance, and for that reason should be treated in that manner. After deducting these items and [fol. 543] adding the incomplete construction the original cost is $26,288,911.00, subject to the remarks made on page 4 of the report, as follows:

"The adjustment under the caption of Financing Improvements and Betterments is for the purpose of eliminating from the property accounts the element of bond discount and expense. This discount and expense was incurred for the most part in connection with the marketing of the company's first mortgage bonds in 1916 and 1917. Items of this character are properly classified as a deferred charge. They are, in effect, interest paid in advance and as such should be amortized over the life of the securities to which they relate. Public service commissions generally have held that this is the proper treatment for security discount and expense items.

Prior to 1916 in cases where the company retired property or abandoned acreage it charged the book cost thereof either to operating expenses or profit and loss. In the years 1916 and 1917 and to a minor extent in 1918, it transferred such book cost from the physical property accounts to an account called Depreciation and Adjustment. The amounts in the latter account were still retained as part of the natural gas property cost. Since this property is no longer in service its cost cannot be included in the [fol. 544] original cost of the existing property. If a depreciation reserve had been provided in the earlier years the amounts in the Depreciation and Adjustment account would have been chargeable thereagainst. In the absence of a depreciation provision the book cost of the retired or abandoned property should have been charged to profit and loss. In any event this item is not properly included in the cost of the physical property.

In reports heretofore made we have always included Incomplete Construction as a part of the property cost. Such incomplete construction is often incomplete from an accounting standpoint only. The property is sometimes

actually in use and where this is not the case the investment has at any rate already been made. In the present case no interest is charged to construction so that no carrying cost is added to the direct cost.

The cost of the gas property after adjustment, $26,288,911.83, as shown above, does not represent the actual cash cost of the property either to the present owners or to the present owners and their predecessors in interest.

At the time the present company, United Fuel Gas Company, Inc., and subsidiaries, was organized in 1909 it ac- [fol. 545] quired property, represented principally by acreage, from the United Fuel Gas Company (old company) the United States Natural Gas Company and the Hope Natural Gas Company. On the books of the United Fuel Gas Company, Inc. (the new company) the property acquired was taken up partly on an appraisal basis and partly on the basis of the book values of one of the predecessor companies. The consideration as far as reflected by the books of the United Fuel Gas Company, Inc., is concerned, was the issuance to third parties of certain stock and debenture bonds, such third parties in turn making the actual settlement in the case of the Hope Natural Gas Company and the United States Natural Gas Company acquisitions. The actual cash cost of the properties to the present owners cannot be accurately ascertained unless access can be had to the books of the companies from whom the properties were acquired. The method used by the company in finally recording such acquisitions on its books had the effect of clearing all of the unaccounted for physical property through the acreage account, so that subject to the correctness of the book cost of the acreage, the other physical items are recorded on the books as nearly as may be at the original cost thereof."

[fol. 546] In other words, the pipe lines and the wells and the distribution systems, etc., are stated at the original cost, as nearly as they may be determined. I say that because of the fact that the original property taken over of this nature was very small and was appraised in the pre-war period, when the difference between original cost and cost of reproduction was very small, and if there is any discrepancy there it would be very minor, considering the additions that have been made to the property since.

That the item that appears on the books of the company as the cost of the leaseholds does not reflect the original cost of these leaseholds, but a higher one; that it would be rather difficult to determine the original cost; that certain deductions are made in a report hereafter filed in regard to that; that he has made an investigation of the operating expenses of the company and has made certain adjustments in regard thereto; that the net earnings of the gas department of the company, according to the books, are $4,307,719.00 for the year 1923; that to this amount he has added adjustments amounting to $2,196,550.00, making the net earnings as adjusted $6,504,000.00; that the principal adjustment is for the purpose of increasing the revenue which [fol. 547] would accrue to the company if the affiliated companies, that is, the Columbia Gas & Electric Company and the Ohio Fuel Supply Company, paid rates comparable to those paid by the West Virginia consumers; that he used this basis because it is the West Virginia consumers' rates which are in dispute. The basis for this statement was the determination of the distribution costs of the company, which we found to be 3.71 cents per thousand cubic feet, which cost is reflected from the accounts of the company, except that additions have to be made for depreciation allowance, allocation of taxes, general expenses, and return on investment, and some consideration must be given to the fact that the rate base heretofore used in an adjudication of rates has been in excess of the book value of the property. Such items as working capital, going concern value, and the accrued depreciation in the property, and appreciation due to changes in price, have been considered; so for the purpose of making this adjustment we used 4 1/2 cents per thousand cubic feet as distribution cost, we deducted that 4 1/2 cents from the average rate paid by the West Virginia cities, which is 20.27 cents, which resulted in an amount of 15.77 cents per thousand cubic feet, which is used in the adjustment and applied to the consumption used [fol. 548] by those two companies. This figure of 15.77 cents was used as representing the value of the gas at the city limits. That in determining this he went further and found that if he used Mr. Uebelacker's reproduction cost the figure would be somewhat over 5 cents; that in addition to this adjustment there are the rentals which flow with the unoperated acreage, which is chargeable to the oil depart-

ment, and taxes apportioned between the departments, which was necessary at this time owing to the extent that a proportion of the leasehold book value has been assigned to the oil department, the Virginian Gasoline & Oil Company paying its own taxes. It was not necessary to apportion the general expenses at this time because the company has followed the principle of assigning the joint general expenses to the Virginian Company and the United Fuel Company on a basis that fairly reflects, as far as could be ascertained, the proportion that ought to be borne by each.

There are some minor adjustments for profit and loss items, which are really delayed items; they come in a year subsequent to the year to which they apply, and the company handles them through profit and loss. They are operating expenses just the same as if they went through the [fol. 549] accounts regularly, because the company suffers a loss to that extent.

There is made an allocation of 50 per cent. of the gasoline net earnings, the basis of which is set forth in the report. The company's basis for depreciation has been accepted, as well as the amount.

There is also deducted Federal income taxes in excess of that shown on the company's books, for the reason that were the adjustments made reflected on the books there would be an additional income tax. The company has on its books for the year 1923 an accrual of $113,000, and this we have increased to $312,000, in round numbers, for the reasons given.

These adjustments result in an increase of the net earnings of the company from $4,307,719.72 to $6,505,270. These adjustments reflect what the net earnings would have been had the transactions taken place upon the theories presented. The adjustment so far as the parent companies are concerned does not affect the allocation for the State of West Virginia. In other words, this adjustment would not have to be made at all if it were not for the fact that the net earnings applicable to the combined property have been [fol. 550] considered in the total. In other words, it wouldn't make any difference whether you made that adjustment or not if the records showed in the distribution to the West Virginia consumers it was taken into account.

That he distributed the investment and net earnings to

the various divisions of the company; that he added to the book cost of the property as used an allowance for working capital and going concern value; that the engineers are in agreement as to $990,000 being the correct allowance for working capital, and he accepted that figure; that as to the item of going concern value he accepted the estimate of Mr. Hagenah, the engineer expert for the defendants, of $3,000,000.00, and added these items to the book cost of the property as used by him, which gives a total investment in the natural gas service of $30,278,912.00.

The adjusted revenues and the operating expense, for the purpose of this report, have been distributed between the various sections of the company's business on the basis heretofore applied by the Public Service Commission and approved by them, with the exception that in the case of transmission property cost, the system demand mileage has been used. I mean that the contribution which each division of the company makes to the system's maximum demand has been multipled by the distance the city or [fol. 551] section of business is from the center of the producing field. I might add that the transmission investment and expenses are a comparatively small part of the—or I should say are not the largest part of the system, so that the use of this method or any method would probably not show greatly different results, if applied to cost figures. I haven't checked Mr. Uebelacker's figures to find out what the difference would be, but I wouldn't say it would be large, especially as between West Virginia and the rest of the service. As a matter of fact, if the demand principle the company has contended for is right, this demand mileage ought to allocate to West Virginia less, it would seem to me, than the sales basis, and I might say if the sales mileage heretofore used by the commission was used, it would give more favorable results from protestants' viewpoint for West Virginia and the cities than would the demand mileage basis.

That this results in an allocation to West Virginia of $8,278,267.00; that the net earnings available for depletion, depreciation and return for West Virginia are $1,567,573.00; that he has divided this among the various cities served in West Virginia, including Charleston, Huntington, Williamson and the other West Virginia districts,

[fol. 552] and that upon the basis of his division it shows applicable for depreciation, depletion and return on the investment in the city of Charleston 21.62 per cent., for the city of Huntington 14.07 per cent., for the city of Williamson 17.17 per cent., and for the other West Virginia districts 20.31 per cent.; that on the basis of his calculations the average return for the entire state of West Virginia is 18.93 per cent. available for depletion, depreciation and return.

In regard to the subject of depreciation and depletion, page 14 of the exhibit shows what depreciation the company sets aside on a cost basis, which excludes the depletion on the value added through the appraisal of properties, and we use the rates the company uses, but have made the exclusions I have referred to for depreciation and adjustments, bond discount and expenses, and oil acreage; the amount allowed for the purpose of depreciation and depletion, as shown by the report, for the gas department, is $1,251,538.00, and for the entire property $1,685,252.00, which is a rate of 4.8 per cent. on the total value of the property. The tables accompanying the report are self-explanatory. The statement on page 11 of the report shows the distribution to the various classes of the com- [fol. 553] pany's business and the amount of each of these items; it also shows the net earnings available for depletion, depreciation and return in the case of each class of business, and the percentage heretofore indicated.

Page 12 shows the application of the adjustments which were made to the book revenues and expenses, and the revenues, expenses and net earnings as adjusted. Page 13 shows the cost of the property and plant per books, the adjustments that have been made, and the cost of property and plant as adjusted, also the make-up of the $26,288,911 as between the various accounts; that there is a difference of about six million dollars between his figures and those of Mr. Uebelacker for the adjusted value of the property.

That he has made a study of the amount of money which the company has in net earnings available for return after depletion, depreciation and amortization, and files the same as part of his evidence, marked Jirgal Exhibit No. 2, and the same is attached hereto as part hereof; that in this table the same investment and the same allocation of in-

vestment to the various classes of business are shown as were used in Jirgal Exhibit No. 1, and the same net earnings are shown; that there is deducted from it the allow-
[fol. 554] ance made for depreciation and depletion on the company's rates, with the adjustments already explained; that is, the $1,251,539.00 has been deducted from the net earnings available for depreciation, depletion and return, and the net earnings available for return alone have been thus arrived at; that is shown in the first section of the table.

The second section relates to depreciation and depletion computed on the basis of exhibit filed later in this connection, and the amount of depreciation and depletion on this basis is ascertained as $1,399,227.00. The depreciation and depletion appears in red for the reason that it is a deduction. This amount of $1,399,227.00 is approximately $150,000.00 in excess of that on the company's basis, or about 12 per cent., I should say. That is, on the basis now referred to by the witness, or the second basis, the deduction for depreciation and depletion is that amount more than the amount shown on the books of the company; and after deducting the item of depreciation and depletion the net earnings available for return for each division of the company's property are shown in column 4 of the table. This amount on the company's basis of setting aside depreciation and
[fol. 555] depletion on the book cost of the property is for the several divisions as follows: for the city of Charleston, $636,870.00; for the city of Huntington, $241,559.00; for the city of Williamson, $40,690; other West Virginia cities, $306,584.00, or a total of $1,225,703.00, or an average return on the investment for the entire state of 14.81 per cent.; that the table shows a return of 17.49 per cent. on the investment allocated to Charleston and 9.92 per cent. on the investment allocated to Huntington; that this difference results from the competitor factor in the city of Huntington, where the Huntington Development & Gas Company is in business; that is, the total sales in Huntington are distributed between a certain proportion of duplicate investment; that he considers this as the explanation of it; that on the basis of computing depreciation and depletion hereinafter referred to, the net earnings after depreciation and depletion available for return for the state of West

Virginia are $1,185,384.00, and the percentage on the investment is 14.32 per cent.

That he has made a study and analysis of the books of company with reference to the book value of the acreage of the United Fuel Gas Company, and files the same as part of his evidence, marked Jirgal Exhibit No. 3 (which is at-
[fol. 556] tached hereto and made part hereof); that in this he has made a study of the history of the company relating to the origin and present book value of the leases; that in order to understand the acreage account, for the purpose of presenting the original cost of the acreage, it was necessary to go into the history of the company to find out just how the book value was arrived at. The acceptance of the figures of the book cost without going into the history of the make-up of the acreage account would not give all the information necessary to ascertain the approximate original cost thereof, because of the factors hereafter explained. The original United Fuel Gas Company was organized on March 2, 1903, and up to the year 1909 had issued only $250,000.00 of capital stock. In the latter year it was reorganized by the formation of the United Fuel Gas Company, Incorporated, which is the present company, and the authorized capital stock was increased from $250,000.00 to $10,000,000.00. At the time of the reorganization, the present company apparently took over the book assets of the old company and assumed its liabilities.

I give here on page 1 the opening entry on the books of the United Fuel Gas Company, which shows that the prop-
[fol. 557] erty account had in it $980,694.00, and also capital stock outstanding of $250,000, and it was indebted to the Ohio Fuel Supply Company $778,121.00.

No investigation has been made of the books of this company to determine the book value of $980,000, but the records of the new company state that 277,997 acres of leasehold rights and a few wells were acquired from the old company. The account with the Ohio Fuel Supply Company was liquidated by the issuance of $750,000.00 in capital stock, thus bringing the issued stock at that time to $1,000,000.00.

The new company, shortly after its organization, acquired the property of the United States Natural Gas Company and certain of its subsidiaries and also acquired con-

siderable acreage from the Hope Natural Gas Company. These acquisitions, together with the property taken over from the old United Fuel Gas Company, form the nucleus of the present system.

In the case of the United States Natural Gas Company purchase, the contract of purchase was originally made on July 15th, 1909, by Mr. M. C. Treat and Mr. George W. Crawford. They later assigned their rights to the Ohio Fuel Supply Company. That assignment was provided [fol. 558] for in the contract.

That the minutes of the board of directors approving this contract showed that both Mr. Treat and Mr. Crawford were directors of the United Fuel Gas Company at that time.

The Ohio Fuel Supply Company in turn directed that the conveyance be made to the United Fuel Gas Company. The original contract with Messrs. Treat and Crawford provided for a cash consideration of $2,081,250.00 and the assumption by the purchasers of all of the liabilities of the United States Natural Gas Company and those of the subsidiaries covered by the purchase. The company received for the above consideration all of the physical property and rights of the United States Natural Gas Company and these particular subsidiaries, together with the other assets in the form of receivables, materials, etc., owned by them.

The purchase was recorded on the books of the United Fuel Gas Company on the basis of the book value, as we understand it, of the property account on the books of the United States Natural Gas Company, and the recording of the value on the books of the United Fuel Gas Company in this manner resulted in the difference between the assets [fol. 559] and liabilities being $4,073,898.00, which was considerably in excess of the cash consideration in the original contract. The difference between the amount at which the net assets were taken on the books and the cash consideration paid by Messrs. Treat and Crawford was $1,992,648.00.

The United States Natural Gas Company's property consisted of 143,742.48 acres of leasehold and fee rights and also a natural gas transmission and distribution system.

On June 30, 1910, the Hope Natural Gas Company deeded to the United Fuel Gas Company its rights in 614,000 acres

of gas and oil land and some minor property. The other property was very insignificant. The accounting in connection with the property was, as in the case of the United States Natural Gas Company, for some time prior to the actual date of the deeds. I might add, in the case of the United States Natural Gas Company, while the property was taken in September, the accounting was actually made as of May 31, 1909. In other words, the United Fuel Gas Company got the earnings and assumed the expenses, and they got the assets and assumed the liabilities between [fol. 560] May 31, 1909, and the actual date of the exercising of their option to purchase. The acquisition from the Hope Natural Gas Company was taken up on the books at $3,200,741.00. The actual cash consideration, if any, is not shown by the records. When I say "actual cash consideration, if any," I mean whether there was any actual cash passed in this transaction is not apparent from the records. I don't want it to be inferred that this property was bought for nothing. I just make that explanation.

Both the Hope Natural Gas Company and the Ohio Fuel Supply Company had advanced considerable sums to the United Fuel Gas Company for development and other purposes, and in July, 1910, all of these advances and also the property purchase accounts were settled by the issuance directly or to third parties of $5,000,000.00 in capital stock and $3,392,072.90 in debenture bonds. The transaction was recorded on the books as given at the top of page 4.

It will be noted that the United States Natural Gas Company and the Hope Natural Gas Company purchases were included in this settlement at the amounts already referred to. In other words, in the case of the United States Natural Gas Company the settlement was made on the basis of [fol. 561] $4,073,898.00; in the case of the Hope Natural Gas Company acquisition the settlement was made on the basis of $3,200,741.00.

The distribution of the securities, as shown on the middle of page 4, shows that the Ohio Fuel Supply Company got $1,587,854.83 par value of the debentures and $1,000,000 par value of the stock; the Hope Natural Gas Company got $569,726.03 of the debentures and no stock; Alfred C. Bedford or to whom he may direct secured $1,028,392.00 of the debentures and $4,000,000 of par value of stock; Standard

Oil Company of New York got $206,100.00 of the debentures.

It will be noticed from what I have said already that the United States Natural Gas Company acquisition and the Hope Natural Gas Company acquisition were recorded on the books at values which apparently had no reference to any cash consideration involved. An appraisal was apparently made of the physical property, — that is, the transmission and distribution lines, wells, etc. — which property was acquired aside from the acreage, and the balance of the book value placed on the total property was considered as applying to such acreage. This acreage was first given a value of $5.00 per acre at about the time of acquisition, [fol. 562] but this left $2,000,000.00 in the property account as unassignable to any tangible property. In 1911 the officers of the company placed a value on each leasehold or other property rights ranging from $1.00 to $50.00 per acre. The valuation per acre for the more important districts is shown on page 14, if you will refer to that at this point. If you look at the total column you find for the operated acreage in the Big Sandy District the average valuation is $44.00 per acre; in the Curtis District, Roane County, the valuation is $50.00 per acre; in the Geary District, Roane County, the average is $49.67 per acre; for the Smithfield District it was $45.70 per acre; for the Spencer District $50.00 per acre; for the Walton District it was $39.77 per acre; for all the other districts a valuation of $1.00 per acre.

In the case of unoperated acreage, the valuations are somewhat lower, but for all of the territory in the principal producing fields the valuations are at least in excess of $10.00, and the average is considerably above that. Six hundred and twenty five thousand acres in the unoperated fields was classified as having a value of $1.00 per acre; in all 1,056,000 acres were valued in this manner.

[fol. 563] The appraisal thus made showed a valuation of $7,233,538.00, which is just $300,000.00 greater than the value of the acreage today as carried on the books of the company on a cost basis.

That he made a very extensive analysis of the acreage account, which involved a great amount of work, as there are thousands upon thousands of these leases, but the detail

work was done, which involved an examination of each lease and each voucher. As I will explain later on, certain of the vouchers were missing, not through any fault of the company's accounting system, but they were in some other department or something like that and couldn't be immediately located. We reviewed 90 per cent. of the leases purchased since the date of the purchase of the original property. I want to say right here that the company's records are very complete; they are well kept, and you can get as near as possible perfect information from them, —I think as clear a set of records as I have ever seen.

This table shows how the present book value of the acreage is arrived at; that is the table on page 6. I want to state at the outset there is in there, because of the consolidation of the companies, 10,483.6 acres and $238,107.92 [fol. 564] of the oil acreage which is applicable to the operated portion of the oil property of the Virginian Gasoline & Oil Company. In other words, for the purpose of this case, that would have to be excluded from this figure of $6,971,509.00 at the outset. This has nothing to do with this adjustment we made for unoperated oil acreage. It relates to what the Virginian Company shows on its books as operated oil acreage.

This statement shows in the first line the original purchase from the United States Natural Gas Company, the Hope Natural Gas Company, and the United Fuel Gas Companies, and at the bottom of the statement I have a summary which brings out the $7,233,538.00 valuation to which I have already referred.

Now, properties were subsequently acquired from other parties which had a value of approximately $501,000.00 and a total of approximately 69,000 acres. In order to get that figure you have to add the operated and the unoperated acreage.

Now, the next item is very important as bearing upon the present inquiry. This is the miscellaneous leasehold acquisitions which have been made by the company since the original purchase of the properties from the United [fol. 565] States Natural Gas Company and the Hope Natural Gas Company. I want to exclude, for the purpose of this discussion, the items under the operated acreage caption, because they are small, and confine my testimony

to the unoperated territory or field. This shows there was acquired 1909 to 1923 1,028,000 acres of unoperated territory, for which a cost is shown on the books as $1,031,000 or approximately $1.00 per acre. During this period in the unoperated section there was abandoned approximately 1,300,000 acres, for which a valuation of approximately $1,600,000 was recorded upon the books, and it gives a per acre value of slightly in excess of $1.00. In other words, most of the acreage abandoned appears to have been abandoned in the territory which is not now producing territory, during the time that I have mentioned from 1909 to 1923, inclusive. There was transferred from unoperated to operated acreage 55,674 acres, at a valuation of $1,389,000.00. That $1,389,000.00 was obtained by taking from the books, in the case of leases that were transferred over to the operated acreage, that valuation that was placed on those particular leases in the beginning, and as I show later it also included the cost for making additional bonus pay-
[fol. 566] ment at the time the renewal was made.

Now, going next to the acquisition of these miscellaneous acquisitions, the total of which is 1,028,132.15 acres, and having a book cost of $1,031,000.00 or approximately $1.00 per acre, in the middle of page 7 it shows that this is made up of new leases, renewal payments, fee property, and this unaccounted for item to which I have already referred. That is in the case of the unoperated acreage and, as you will see, the total is 1,028,132.15 acres, at a book cost of $1,031,000.00. I want to call attention to the fact that the majority of these leases, as far as we could ascertain, are made for a ten year period. That means these leases have been renewed once since the original acquisition and, in a number of cases, twice. I will bring that out further later on. Of the $1,031,000 application to new leases, as such, there are 932,000 acres of these new leases in this period. During this period there was $340,000 paid for renewals of the acres, so it will be seen that the renewals greatly affect the average price of $1.00 to which I have already referred. There was $231,000 paid for fee property, and $141,000 for unaccounted for, on account of not
[fol. 567] being able to locate these vouchers in time to investigate them; but in the case of the unlocated vouchers you will note the valuation is not much different than in

the case of the located ones, keeping in mind always there may be renewals in there as well as new acquisitions. In the case of new acres acquired, that is 932,000 acres, which we could localize, the cost was $319,000 or an average of 34 cents per acre.

We made a complete analysis of these acquisitions by years and districts and the following summary which appears on page 8 is the result of that analysis:

In West Virginia from 1910 to 1914 there were acquired 307,000 acres, at an average cost of 27 cents per acre; from 1915 to 1920 there were acquired 320,000 acres, at an average cost of 50 cents per acre; from 1921 to 1923 there was acquired 62,000 acres, at an average cost of 83 cents per acre. The total for West Virginia during the whole period was 689,000 acres, at an average cost of 43 cents per acre. I might state here that the increase in the period of 1921 to 1923 over the period from 1915 to 1920 is more apparent than real. During that period the company acquired 70 acres in the Big Sandy District, for which they had to pay [fol. 568] $25,000. As I understand the situation, the company thought that they had the leasehold rights on this 70 acre tract, while it was later discovered they only had a one-half interest, and somebody purchased the other one-half interest and on account of the territory being necessary to the company's business they had to pay this price. That was extraordinary. I wouldn't say that was the only one; there might have been some isolated cases but I think not of this magnitude; there couldn't have been, because the whole amount involved in new acquisitions is only approximately $350,000.

In unproven territory our study of these leaseholds, which I have stated involved 90 per cent. of the new acquisitions, show that the bonus payment bear a definite relation to the matter of delay rentals, to which I shall refer later on. In unproven territory where the annual rental charges are $1.00 per acre, the bonus payment amounts to one quarterly rental or 25 cents per acre. In proven territory the annual rental charges range from $150.00 to $500.00 per well site, and one annual rental is paid as a bonus, as a rule. It is the practice of the company to allot 100 acres to a well site, although this basis varies considerably with the number of acres in the lease. In other words,

[fol. 569] you purchase a lease of sixty acres and drill a well on it and that goes into the operated property at sixty acres; if they purchase 500 acres, my understanding is that they allot 100 acres for the first well, etc. In Kentucky the price paid for territory is about 50 cents per acre per year in rentals with a bonus of 10 cents per acre.

That out of 735,000 acres of unoperated territory there is 105 acres in Kentucky; that for a large amount of the unoperated acreage renewals are made for the nominal sum of $1 per acre.

Now, for the purpose of ascertaining the effect of these renewals and for the purpose of comparing the renewal cost in the case of the particular acreage, which was taken over in the original acquisitions, and the valuation placed upon the same per acre, we made a study of all of the leases in the important districts, which were renewed in the period from 1922 to 1924, and we ascertained in the case of these renewals the original valuation which was placed upon this particular acreage by the company's officers in the beginning. The average cost per acre of the renewal in the period from 1910 to 1921, and the average cost of the renewal in the present period,—that is, the period from 1922 [fol. 570] to 1924. We took only the more important districts, like the Big Sandy and the Curtis, Geary, Smithfield, Spencer and Walton.

That these districts, particularly Big Sandy and Geary, are in the operated territory, and certain portions of the other districts mentioned are apparently in the operated territory; they are in the important producing territory. This statement shows, for instance, in the case of Big Sandy District, that the original valuation placed upon this particular acreage was $29.67, on the average. In 1910 to 1921 this acreage was renewed at 98 cents per acre, and in the period from 1922 to 1924 it was renewed at $4.50 per acre. We have taken the same leases, but, for instance, you will notice a little difference in the acreage in the period from 1910 to 1921. That means there were a few leases that did not expire in that period,—a very few you can see, only 43 acres, but in the next period you will find the total acreage renewed was 5,460.67 acres. That the renewals made in the period 1922 to 1924 in the Big Sandy District reflected a price of $4.50 per acre. In the Curtis District the orig

inal valuation made to the acreage was $31.54; the renewals between 1910 and 1921 show an average of $1.29 per acre; [fol. 571] renewals between 1910 and 1924 show an average of $1.31 per acre, and you will notice in this case that the renewals in 1922 and 1924 correspond with it or cover the same number of acres as covered in the original valuation.

That the later pages, 28 to 36, show all the details; the other districts show about the same variations for the total leases which were renewed in the particular districts. The average valuation given in the beginning was $38.37; the renewals from 1910 to 1921 were made at an average cost of 95 cents per acre, and the renewals between 1922 and 1924 were made at an average of $4 per acre; that the valuations shown, ranging from $52.36 to $29.67 per acre, were the valuations originally made, and are reflected in the investment of approximately $6,900,000.00 shown on the books, and also the renewal of these leases; that is, when a lease came due in accordance with the contract, say in 1913, 1914 and 1915, the company did not relieve its account of the original valuation placed upon these leases, but it added thereto the renewal cost, and if the leases are renewed a second or a third time it would carry that additional cost; that the leases that were renewed were in most cases [fol. 572] renewed about one year before they expired, that is, they start to get renewals of the leases about a year before the expiration; that in the case of physical properties the practice of the company is that when an item is taken out it is charged off of the books, but in the case of these leases the total appraisal cost is included, as well as the total cost of renewal.

The next table shows that 83 per cent of the business in the operated acreage was in the particular districts investigated, and that of a total of $6,399,390.00 of unoperated acreage, book cost, $5,310,930.00 is in the districts investigated bearing a book value of $24.07 per acre. The valuation of $6,399,000.00 is the original valuation and not the present valuation.

That in regard to the conclusions set out on pages 10 and 11, the indications are that the original cost of this acreage to the original company and predecessors combined is apparently considerably less than the book value at the pres-

ent time; in other words, if there is a finding to be made on the original cost, it would have to give weight to this element; that the report made by Mr. Mease, the statistician of the commission, in 1917, gives a different interpretation, and justifies the conclusion which he has drawn refer- [fol. 573] ring to the United Fuel Gas Company property. That report says, "The total cost of this property to the United States Natural Gas Company did not exceed $2,200,000.00, or considerably less than the amount of the bonds assumed by the United Fuel Gas Company. The stock of the United States Natural Gas Company was practically all bonus stock, and the cash consideration mentioned above probably was all profit to the stockholders."

I think it is necessary to give some consideration to the matter of delay rentals, especially in view of the statement contained in the recent decision of the Supreme Court of Appeals in the last case. I think it is essential to understand in the beginning that what is on the books as representing book value of leaseholds is supposed to represent the first payment on the leasehold right. Now then, if a well is not drilled at once, as usually the case, a delay rental is paid. If the well is drilled at once a royalty is paid. Now, both the rental and royalty are included in the operating expenses of the company and have been since the beginning. The carrying charge in rentals is therefore a part of the cost on which rates have been determined up to this time. Any expense attached to securing these lease- [fol. 574] holds by the land department is also included in operating expenses. Since 1909 there have been included $668,000 of leasehold expense and $6,458,000 of rentals on unoperated acreage, making a total of $7,126,000. The first item of $668,000 is expense of getting the leases, and it is treated on the books as an operating expense, and the same is true of the rental. There has been included only that portion of the rentals and leasehold expenses that he finds assignable to the gas end of the business, and has indicated that a part should have gone over to the oil business, which had not been included, so that from 1910 to 1923 there is an operating charge of $7,126,454.00 as rentals and leasehold expense; that if this amount was included as capital it would increase the amount upon which the return should be computed, but that it would decrease the expenses of the

company, so that there would be a larger amount left for return.

That he has made a study and analysis of the accounts of the company that relate to the demand for the gas of the company during the year 1923, allocated to the several classes of consumers, and files the same as part of his evidence, marked Jirgal Exhibit No. 4 (which is attached [fol. 575] hereto as part hereof); that this table shows the basis used for allocating the transmission investment and expenses; the percentages are shown on page 2; it shows the contribution of each division of the company's business to the maximum demand of the system, and also the maximum daily demand regardless of the system peak; that is on page 3. On page 5 is shown the demand for each day of January 1923, and in that month the seventeenth appears to have been the coldest day and is also the day on which the maximum demand for the system occurred; that from the report it would appear that the sixteenth was as cold as the seventeenth; that the seventeenth would not appear to be as cold as the sixteenth; that he has made a study of the temperatures and conditions for each of the cold months in a survey of the principal divisions of the company's business; for instance, for the Louisville Gas & Electric Company, at Louisville, for the Pittsburgh & West Virginia and Hope Natural Gas companies at Pittsburgh, the Ohio Fuel Supply Company at some points in Ohio, and the Columbia Gas & Electric Company at Cincinnati; that there is a certain diversity between those points; that it seems that it is colder west of Charleston than it is in West Virginia; that the average [fol. 576] gas delivered to the Columbia Gas & Electric Company in the month of January 1923 was 38 million cubic feet per day, and that on the coldest day it was 45 million cubic feet; that for the city of Charleston the average for the month was 23,500,000 cubic feet per day, and for the peak day it was 28,400,000; that the table is worked out for the months of January, February and December 1923, and the coldest day in each month is indicated in red.

That he has taken from the records of the company detailed statements which support the figures he has introduced in evidence and compiled the same into a report, which he files as part of his evidence as Jirgal Exhibit No. 5

(which is attached hereto and made part hereof); that this report simply shows that all the figures in the preceding statements conform to what is reflected by the books, so that anyone can check the results without having to consult the working papers.

That he has also prepared a report on the adjusted gas investment and operating profit from 1909 to December 31, 1923, from an analysis and study of the company's books, and files the same as part of his evidence, marked Jirgal Exhibit No. 6 (which is attached hereto as part hereof).

[fol. 577] Page 1 shows property account as it has been built up on the book cost basis from July 1, 1909, to December 31, 1923. You will note in the first column that the amount which I testified to was the book cost as per the books of the company, $27,511,797.04. That is the same amount which I show in Exhibit No. 1 as the book cost distributed between years. To that book cost I have made by years the same adjustments to which I testified from Exhibit No. 1, with the exception of adjustments on labor costs of drilling new wells. That does not affect the present cost of the company's property for the reason that the company had those adjustments on its own books, and I have just related it to the proper years. In other words, it gives the company credit for making the adjustment for the year in which it was done. It shows the adjusted book value of the company to be $26,288,911.83, as I testified this morning.

On page 2 I show the adjustments to the net earnings as per the books, all of which adjustments with the exception of the cost of drilling new wells and the abandoned leases charged to expense, are as explained this morning. Now, on the cost of drilling new wells, I have explained that the company made that themselves, and I have made [fol. 578] it in the proper years. So far as the abandoned leases are concerned, the company charged abandoned leases to expenses until 1914. In 1916 and 1917 it charged these abandoned leases to an account called Depreciation Adjustment. From 1917 to date, it has charged these abandoned leases to Depreciation Reserve, or to Profit and Loss. The amount charged to Depreciation Reserve is that amount for which provision had been made in advance, and for the amount that the provision had not been made in advance, the charge is made to Profit and Loss. I will show how

that is taken care of in a statement later on. This statement shows that the net earnings as adjusted for the period from July 1909 to December 1923 were $53,928,858.94. That is before depletion, depreciation and Federal income tax. This relates to nothing but gas earnings, no oil, only the proportion of gasoline that has heretofore been included, no carbon black.

On Statement No. 3 I show the book cost as adjusted and as reflected in Exhibit No. 1. In the next column I show the average investment for the year. The third column, 4 per cent. for working capital, which is approximately the figure which has been included by the engineers—slightly in [fol. 579] excess of that. The fourth column is the average investment before allowing for accrued depreciation and depletion. Now, on the basis of the amount which I included in Exhibit No. 2 this morning, a depletion and depreciation reserve would be accumulated over this entire period, to the extent of $13,948,899.00. In other words, if the rate of depreciation and depletion which I introduced in Exhibit No. 2 this morning had been applied on the books of the company since the beginning they would have accumulated in the reserve, subject to deduction for retirements, a sum equal to $13,948,899.00. Now, the records of the company show that they have abandoned acreage, charged off property that is no longer in service, and in general made retirements of property during this period equal to $2,950,222.00, which would mean that if the reserve had been accumulated at the rate indicated by Exhibit No. 2 the balance in the depreciation and depletion reserve on a cost basis, as of December 31st, 1923, would have amounted to $10,988,677.02. In other words, approximately $11,000,000.00. Now, if the average balance is deducted from the average investment, as shown in column 1, the depreciated book cost of the property as of December 31st, 1923, would be $16,468,544.00. I want to point out that the company [fol. 580] did have on its books December 31st, 1923, as applicable to the gas department, a reserve equivalent to $10,325,240.00, so they have got on their books—the company has on its books an amount which about approximates the amount I arrived at by this method, and that has been set up by them on a basis of the cost of the property. It does not include any depreciation of the appreciation which re-

sulted by putting the appraisal on the books in 1918. Now, the statement on page 4 shows the adjusted net earnings before depreciation, depletion and Federal income tax, as already shown on page 2. I notice there is a difference there in the thousand column, but that can be reconciled. The depreciation and depletion which would be taken off would be $13,948,899.00, already testified to as regards to page 3. The Federal income tax during this period, and by that I mean the normal Federal income tax, which is the amount held to be included in operating expenses, $1,229,656.00—that is, exclusive of the excess profits tax. Before 1917, if there were any Federal income tax accounts, they were included in the regular tax accounts which are already a part of the operating expense. The total deductions for depreciation, depletion and Federal income taxes amounted to $15,178,555.00, leaving earnings available for return on in- [fol. 581] vestment of $37,900,303.00. Now, in connection with the commissioner's question a short time ago, included in the operating expense is all the rentals applicable to the gas department, rentals on unoperated acreage.

That there has been a separation for depreciation and depletion among the various items; the company keeps a separate record of depreciation and depletion applicable to gas and oil, tank car, and also separates between depreciation and depletion based on the cost and based on appreciation due to appraisal.

The depletion, we tried to find out from the company the basis on which it was arrived at and we were directed to see Mr. Davis, and Mr. Davis apparently had a method which he felt he had evolved himself, and we didn't get the exact nature of it, but the amount we had in there is in excess of Mr. Davis' figures on the cost statement. That is true in 1923; I haven't gone back into the years, but it is true in 1923. And on page 5 the question is answered, I think, as to whether the company has earned a return of any given percentage on its investment. In this statement, we have divided it into two sections. First, the section which uses the average investment depreciated as a basis for the [fol. 582] calculation, and the second where no accrued depreciation and depletion is deducted from the book value at all. It is shown that the commission may be informed as to what the application of the accrued depreciation and deple-

tion would mean to the book cost. In other words, there you have a property that is subject to exhaustion because the life is determined by the natural gas fields, and in order to show the extent to which the application of depreciation and depletion costs would affect the books we have prepared this table. This table shows that on a basis of 8 per cent. return, the company during its history has earned $20,000,000.00 in excess of that return in case the depreciated book cost is used as a basis, and $15,400,000.00 where the undepreciated average investment is used as a basis. That is over the 8 per cent. I have here a calculation showing the actual percentage. It shows that on the depreciated basis, that is, the basis referred to in the first four columns of the exhibit, the company has earned 17.2 per cent. on its investment, and on the undepreciated basis they have earned 13.5 per cent. These are the average for the entire history of the company.

That he did not make any effort to set up a rate base giving working capital and going concern value, but on [fol. 583] the other hand, he did not adjust for the fact that the original cost was probably less than the book value of the acreage, and did not allow anything for accrued depreciation; that as a matter of fact, up to 1917, the appraisal value of the property, exclusive of acreage, would not, in his opinion, be very much different from the original cost as reflected by the books; that as to the acreage he would not be qualified to testify what the value would be in each year, but does know that the book value is considerably in excess of the original cost; that the value of acreage shown by him is the original appraisal, with the amounts which were expended added each year to the same; that there is not such a large factor on that account when it is considered that the original book cost was $7,000,000.00 and the renewals $340,000.00; the excess comes through the original valuation; that the excess earned over a 10 per cent. return and over a 12 per cent. return has also been worked out; that the excess over a 10 per cent. return on a basis of depreciated investment, the company has earned an excess of $15,900,000.00, and $11,500,000.00 in excess of a 12 per cent. return; that in the case of undepreciated investment the company has earned in excess of 10 per cent. [fol. 584] $9,800,000.00, and in excess of 12 per cent. $4,200,000.00.

Page No. 6 is a comparison of balance sheets as of December 31st, 1910, right after the original properties were acquired, and December 31st, 1923. I have a statement here which I will introduce showing each expense, which makes it more readable than the information which this comparative balance sheet shows. Now, in the subsequent tables we have shown for every year since 1909 the earnings of the company by departments, the surplus account on page 8, the detailed operating expenses on page 12, the detailed property accounts by departments on page 13, the details of the gas department property, page 14, the cubic feet of gas sold every year of the period. The latter statements are introduced for the purpose of supporting the conclusions reached in the first five or six tables.

That the tables show that for the year 1923 the United Fuel Gas Company sold to the Central Kentucky Natural Gas Company 1,535,000 thousand cubic feet of gas, to the Louisville Gas & Electric Company for the same year 1,027,000 thousand cubic feet, to the Portsmouth Gas Company for the same year 1,277,000 thousand cubic feet, and to the Montgomery Gas Company for the same year 129,000 [fol. 585] thousand cubic feet; that the amount of gas sold in West Virginia during the year 1923 was 11,675,000 thousand cubic feet.

That he has prepared a statement showing the source and application of funds of United Fuel Gas Company from January 1st, 1911, to December 31st, 1923, and files the same as part of his testimony, marked Jirgal Exhibit No. 7 (which is attached hereto as part hereof).

This table is designed to show where the money has been gotten since 1911 and up to December 31st, 1923. I have tried to make this statement more simple than what would be shown by the comparison of balance sheets which I referred to a short while ago. It will be noted that the increase in the funded debt during that period is $3,821,000.00. From that must be deducted the discount and expense in connection with the sale of bonds and any premium that is paid in retiring old issues—that is, like issues that are taken over by the United States Natural Gas Company, and calling of 7½ per cent. bonds, etc. It shows that from this source there was secured net only $3,318,000.00. There was secured through earnings during this period $50,211,-

780.00. Now, these moneys were disposed of as follows: [fol. 586] $21,000,000.00 was spent for gross additions to the property since that time; $1,400,000.00 was spent for investments, and by the way, these investments shown are in the company's own bonds for the sinking fund, a considerable portion of them. I think most of that item is that, in fact; making $22,565,000.00 which is spent for capital purposes. $28,024,000.00 has been paid out in dividends, and the working capital, that is the net working capital, has been increased by $3,254,601.00. The significance of this source and application fund statement is to show the tendency of the company during all this period to finance itself out of its surplus and reserve funds. I can probably give you approximately how this $22,000,000.00 of property was financed. About $3,000,000.00 came from bond money; the stockholders got a $4,000,000.00 stock dividend; and there is a balance of $13,000,000.00 in the depreciation reserve. I think there is about $2,000,000.00 in surplus, so if you add that together it shows how the company has financed all these additions and betterments since 1910. In other words, there has been $3,000,000.00 in new money put in in all that time.

That he has made a study of the gasoline earnings of the [fol. 587] company, and files the same as part of his testimony, marked Jirgal Exhibit No. 8 (which is attached hereto as part hereof). The statement shows the net earnings of gasoline, after deducting for depreciation, Federal income tax, and what the 50 per cent. would represent in dollars and in percentage in investment in gasoline equipment. The last figures in the column, 80.40, represent the percentage that 50 per cent. of the gasoline net earnings would represent on gasoline investment—that is, that 50 per cent. of the net earnings would produce a return of 80.4 per cent, exclusive of tank car earnings; that the figures used are within $1000.00 of Mr. Uebelacker's figures.

That in his opinion it would seem that you would have to make a separate allowance for depreciation and depletion and one for return, because there are a considerable number of elements entering into the cost of reproduction of the property or the original cost which are not depletable or depreciable; for instance, going concern value would not be, and working capital would not be; your rights

in the fee land would not be; salvage in property would not be; so it would seem that the thing to do would be to relate the elements for depreciation and depletion to the depre- [fol. 588] ciable property and to compute the return on the fair value, whatever it might be. In this case the figures for depreciation and depletion amount to 5.3 per cent. of the total property, and on that basis on the book cost it would show a reserve of $11,000,000.00, which would represent 42 per cent. of investment before being depleted and depreciated; that would be true on the reproduction cost, the same on original cost, and would follow the same principle; that in his opinion, regardless of the value set for the acreage of gas in the ground, the depletion of the same should be on the basis of the original cost, and should have no reference to the value for proposed return.

That he has prepared a statement showing what the original cost should be, and used that as a basis for depreciation and depletion, rather than the cost of reproduction.

In my opinion the allowance for depletion and depreciation should be based on the cost of the property rather than the cost of reproduction, for the following reasons: First, the purpose of a depletion and depreciation reserve is to keep the investment intact and not return to the investor the cost of reproduction at any given moment. There must be some common basis for computing profit in all in- [fol. 589] dustries, including public utilities, otherwise all figures on cost production would be meaningless. The original cost or equivalent has been the basis adopted for depletion and depreciation in accounting for profit; similarly, when the United Fuel Gas Company determines its profit available for dividends, at present as well as in the past, it considers depreciation and depletion at cost, and whatever remains is deemed applicable to such dividends. I might say the company at the present time has an appreciation on its books, which is the same except in the matter of degree as the appreciation which it is claiming in its cost of reproduction study by Mr. Uebelacker. The company, on its books, at the present time, has an appraised value for its acreage, per its books, of $42,000,000.00, and yet the depletion of that $42,000,000.00 has absolutely no effect on the amount which it computes as profit before it declares its dividends. The depletion of this amount is

charged to an account which was set up on the books at the same time as appreciation, due to the added value which came through that appraisal. Now, if the company is not going to have its profit determined on the basis of the depreciation and depletion that it claims here, then it [fol. 590] means in effect that whatever excess the company gets in the way of depreciation and depletion on the cost of reproduction basis over what it would get on the original cost basis is nothing more than additional return to it. In other words, if you fix the rates of the United Fuel Gas Company on the basis of depleting its property and depreciating it on the cost of reproduction basis, and the company follows the method of accounting which it now has in vogue, that difference to which I have referred will be accounted for by them as profit and will be available for interest and dividend payments. It will be nothing more than additional return, over and above what you figure is a fair return upon its investment.

Now, Mr. Uebelacker, for instance, finds in his rate approximately 13 to 14 cents as the amount that is applicable to depreciation and depletion on a cost of reproduction basis, and if the cost records show that only 3 or 4 cents is applicable for this purpose, you have 10 cents in the rate which can find its way in the books in no other way than in the profit and loss account as dividends. In other words, on the basis of 46 billion cubic feet of sales, that would mean an additional profit to the United Fuel Gas Company of [fol. 591] $4,600,000.00; in the case of West Virginia it will mean a profit of over one million dollars. Now, the West Virginia classification of accounts provides that natural gas companies shall provide for depreciation and depletion on the basis of the original money cost. In substantiation of that, I will read from the classification. In the case of depreciation the classification says:

"In determining its rate of depreciation the utility shall, in the case of those structures and items of equipment that can be satisfactorily individualized, provide for each such structure and item of equipment an amount which will through regular accumulation insure at the time such structure or item of equipment goes out of service a reserve therefor equal to the original money cost thereof less salvage recovered thereon. In the case of those structures

and items of equipment that cannot be satisfactorily individualized the utility shall keep such structures and equipment in efficient operating condition through repairs and shall treat all renewals or replacements of parts thereof as repairs."

In the case of leaseholds it has a provision that is similar, and that by the way comes down to the value of the leaseholds, the matter under discussion. This is under the cap- [fol. 592] tion of "Amortization of Other Capital Reserve."

"Credit to this account and charge to '477,' Amortization of franchises, patent rights and licenses." That is the name of the account. "478. Amortization of natural gas rights and gas leases," which is the thing we are discussing, and "609. Amortization of interest in landed capital" "accounts those amounts which, through regular application, will provide at the expiration of the lives of the utility's limited franchises, patent rights and licenses, limited rights of way, and leaseholds, a reserve equal to their original money cost."

In the accounting practice of the company, and of all companies, the difference between what a thing cost when it was originally put in and what it cost to replace it is capitalized on the books, so that the company loses nothing if the original money cost is used as the basis for depletion and depreciation, and that is also provided for in the classification.

Now, the practice of applying depreciation and depletion on cost applies to the commercial field generally. Public utility mortgages are drawn up on that basis; for instance, [fol. 593] here is a typical extract from the many I know of. The company may withdraw bonds on the excess, if any, of any expenditures for renewals and replacements over the original cost or the fair value, as the case may be, of the property so renewed or replaced, and in the case of fair value in that instance, it is the fair value at the time when the property is placed in service, not the fair value when it is taken out. The same principle is true in every walk of life. If I borrowed from you a thousand dollars in 1910 and paid you back or had to pay you back, under the conditions of the loan, in 1920, I get a one hundred cent dollar in 1910 from you, and give you back probably a

fifty cent dollar in 1920, but that is due to the fact we have got an inflexible standard of value, and the debtor suffers in the one case and the creditor in another, but there is nothing in the commercial field, generally, which safeguards that; it applies to public utilities as well as anyone else, and the only way it can ever be stabilized is to change the standard of value. That is to say, you would have to put more gold in the dollar to represent the inflation or deflation due to price changes. Now, I want to say that the principle of applying depreciation and depletion on cost of reproduction is impracticable. You can't work it on your books and [fol. 594] you can't work it in justice to the consumers nor to the company, because in one case you would suffer and in another case they might suffer. In the first place, you would have to write the cost of reproduction on the books instead of the book value; first, you have to do that in order to work that on the books, and in the second place, you have to adjust the book cost each year because of the changes in prices, and you have to adjust your depreciation and depletion reserve as well; in the third place, the additions in each year would have to be more or less uniform, as far as the amount going into the capital account each year of the increasing price period and each year of the decreasing price period. In the fourth place, you can't account for profits the way you do now. If the commission determines rates which will cover depreciation and depletion on the cost of reproduction, you would have to retire your property on the cost of reproduction instead of the original cost as you are doing at present; in the fifth place, in order that no injustice should be done or involved by the application of this method, no profit could accrue to the company through the application of the cost of reproduction method for determin- [fol. 595] ing depreciation and depletion.

Now, that is the only way you can allow for depreciation and depletion on the cost of reproduction basis, and it would be an impracticable way of going at it. And that is the reason why the accounting rules are as they are, and, after all, the accounting are the rules that determine profit. The accountants have adopted the cost basis because it is inflexible, and determines your profit at all times on the same basis. Every time you get an increase in rates, on this principle, you don't change your books to the valuation pre-

scribed by the commission but you treat it on a cost basis and that is why you have got to use costs in determining depreciation and depletion. They have to do with what the cost of the property is, and have nothing to do with its value.

That he made no distinction in this method between depreciation and depletion, for the reason that your investment in the depleted property is a thing that has to be kept intact, and that has to be done just the same as any other physical item.

The reason for that is simply this, that the prices change, and if you were to follow price changes you would have to [fol. 596] change your books once a year, and that wouldn't be enough; you would have to change them every month, especially as to price changes as they have been since 1913. I don't want to be understood that original cost is the rate making basis by the commission; and the law is, I think—I can't say what the law is—but you have to consider all elements of value, one of which is the cost of reproduction, and the other is the original cost; another is cost of reproduction depreciated—the orginal cost depreciated; another is the outstanding securities and whatever are the relevant elements of value; I don't want to be understood to mean that the cost of reproduction is the sole evidence of value, nor necessarily the predominant one, but if you consider cost of reproduction in your rate making base and keep the investment intact by providing for depreciation and depletion at cost, you have by that measure done what the regulations that apply to that are attempting to do, and that is to keep the flow of capital in the industry at the price of capital at the time you are making the determination. In other words, if you have a fifty cent dollar in 1920, and you have got to put in your additions on the basis of that fifty cent dollar, and you have got to put in subsequent amounts for [fol. 597] additions in that price period, that factor would have to be recognized and it is recognized in the basis for your return, but so far as keeping your investment intact it doesn't, for this reason, you aren't paid back your fifty cent dollar on this accounting right now; you couldn't be because in the practicable application you could just as well say you ought to be returned your one hundred cent dollar in 1969; your property is still usable and will be used,

according to the estimates, until 1940; well, by 1940 you have returned to you through the application of the cost principle of depletion and depreciation the dollars you put in there and that has no reference at all to price changes.

That the foregoing observations do not apply to fixing the value for the purpose of rate of return, but simply to the fixing of value for the purpose of applying depletion and depreciation; that in this way you return to the public utility the money put in like you would to anyone else. The United Fuel Gas Company has a maturing bond issue in 1936. It is not going to pay to the people today that put their money in the United Fuel Gas Company any other dollar with any more purchasing power than that which exists in 1936. If they put in a fifty-cent dollar they get that fifty-cent dollar back.

[fol. 598] That he knows of no regulation or practice that recognizes any principle other than depleting on the money cost of the property; that for instance, in Mortgages, about which he spoke, the cost that determines what the bondable construction shall be would be the fair value to the public utility at the time it was acquired for the particular purpose; that is one reason why that fair value clause is always put in mortgages, because they want to prevent the transfer of the property in excess of the value at the particular time it is mortgaged, and they always say that the fair value is whichever is the less of the two.

That practically the only difference between the original cost or the historical cost found by Mr. Uebelacker and the amount shown by me this morning as the book cost is the matter of overheads. Now, the company since the beginning has not charged onto its books or has charged its books practically nothing for what is commonly termed overheads; that is to say, engineering, supervision, interest during construction, taxes and contingencies, etc. In order that this method of placing these overheads in the book cost may be fairly applied, you would have to credit the operating expenses for the year 1923 for an equivalent percentage [fol. 599] of overheads. Now in 1923 there were approximately $1,000,000.00 of additions, which would mean that on the basis of overheads, averaging between 21½ and 26 per cent., you would have to deduct from the operating expenses some $210,000.00 to $260,000.00. In other words, you can't

create book cost by merely making application of overhead principles; the money can come from only the company's treasury as a whole; it has to get it through the rates or through financing, and if you take it out of one pocket or put it in another pocket, likewise the property you have to take out of the other pocket, that represents operations.

I want to make this observation on the overheads. Mr. Uebelacker—or before I come to that—In the application of the overhead principle to book cost, you can not take as high overheads as you do in determining the cost of reproduction. In the first place no company charges on its books for taxes during construction; those are all absorbed in the operations; you have no such things as contingencies and omissions, because every dollar spent is accounted for; you have only one-half the interest application, because the property is in use only one-half the time, on the average. Now, those items are a considerable amount. In addition, [fol. 600] there is engineering and supervision, which is an allocated item. Usually the engineering department functions for both the operating department and for the construction department.

I want now to come to the most important item, and that is the cost of financing; in no company's books is that accounted for as construction costs; that is accounted for as nothing more than bond discount and expense, what is covered if the company puts in anything and what it puts in at the total discount. That is the difference between par value and the amount which it gets from its securities.

Now that is done in some cases, but it is never allowed, so far as I know, except in the initial stage of construction, in a rate proceeding. The usual rule is to amortize discount, both that part which represents the difference between par value and the amount paid by the investor, and the difference between the amount paid by the investor and that which the utility gets, and where it is not done the proper principle is not applied. In other words, this difference of four points, while it is a fair representation of what the difference is between what the bonds sell to the investor for and what the utility gets, it cannot be added to the his- [fol. 601] torical cost in a proper computation. In a similar historical study, the application of that would greatly reduce the overhead, so far as the original cost or historical cost is concerned, and would still bring in the application

that whatever was charged to construction on account of overheads would have to, on a percentage basis, be applied to additions which are made each year to the property.

That investigations he has made on large properties show that the overheads are considerably less than that indicated in Mr. Uebelacker's report, that is, on the original cost basis; that he is passing on the propriety of the overheads for the reproduction cost; that usually, when the overheads are fairly applied, the larger properties have larger overheads, that is, the percentage of overheads; at least, that is his experience.

That he has made an examination of the contracts and records of the company showing the price paid for gas purchased by the company in the field from other companies operating there; that the record is only carried up to July, 1924, and if any contracts have been made since it would not appear.

The first contract is the Falling Rock Cannell Coal Com- [fol. 662] pany contract. I think that has already been referred to here. That is at 8½ cents per thousand cubic feet. It has this rider in it, that if the United Fuel Gas Company obtains an increase in retail domestic rates in Charleston, above 25 cents, one-third of such increase per thousand cubic feet shall be paid to the coal company. In other words, it is a variable contract, depending on the rates in Charleston.

There is a contract with the Kanawha City Oil & Gas Company, which has the same rider, and which provides for a basic rate of 8 cents per thousand cubic feet. I might say in the case of the Kanawha City Oil & Gas Company contract, the gasoline goes to the United Fuel Gas Company.

The Markham Oil & Gas Company contract, dated June 4, 1924; the price is 6 cents per thousand cubic feet, as long as the price of 15 cents to the Louisville Gas & Electric Company obtains. That is in a field south of here apparently, and when the price goes over 15 cents they get two-thirds of the excess.

There is a contract with A. E. Taylor, five years from December 15th, 1923. The price is 8 cents per thousand cubic feet as a basic rate, and one-third of the increase of [fol. 663] domestic rate at Charleston. The gasoline not to be extracted.

There is a contract with Barnhart and Taylor, from November 15th, 1922. It runs until no longer gas is produced in paying quantities; the price is 7 cents per thousand, with an increase after two years in proportion to the increase in rates which the company receives for its gas.

There is the contract with E. G. Summers. The contract is for 8 cents, plus one-third of the increase; eight cents is the basic rate, plus one-third of the increase in domestic rates received by the United Fuel Gas Company; the gasoline not to be extracted by the seller in that case.

Here is a contract with the Poca Fork Oil Company, for five years from July 9th, 1924; the basic price is 8 cents, with the rider of one third, dependent upon the domestic rate; the gasoline is not to be extracted by the seller.

There is a contract with Jeff Miller et al., two years from June 27, 1923, at the price of 7 cents for the first year and 8 cents the second year, with no rider.

[fol. 604] There is a contract with the Morley Oil & Gas Company, for five years from November 14th, 1923; the basic rate is 8 cents per thousand; the gasoline not to be extracted by the seller, and one third of any increase in the domestic rate shall go to the owner of the lease.

That in making his study of historical cost Mr. Uebelacker used the cost approximately at the time the property was put in, and with reference to the acreage he took the book cost thereof; in other words, the same principle is not applied in the acreage as in the rest of his work; that in order to ascertain the historical cost of the acreage he would have to go back to when it was bought; that in determining whether or not the rates of depreciation and depletion are reasonable or otherwise there are several factors to consider. The company on its depreciation rate has apparently followed the straight line method, without any credit being given to the reserve for any interest accumulations. It has also made no specific allowance, so far as we could ascertain, for salvage value, and the cost of the removals of the salvage, in the case of this company, are included in operating expenses, and the company includes in its repair accounts what are classed as minor renewals, [fol. 605] all of which elements would serve to make the rate rather less than it would be if all of these elements weren't present, and, as I have already shown, the rate

which we have used is higher than that of the company, and gives a reserve as of December 31, 1923, of $11,000,000.00, which is approximately 42 per cent. of the book cost of the property as adjusted by us.

That his Exhibit No. 2 shows the net earnings available for return, both on the company's basis of depletion and depreciation, and also the allowance for depletion and depreciation as used in his exhibit; that this rate of depletion and depreciation is about 5.3 per cent., and would leave available on the later basis for return $5,105,000.00, which would be an 8 per cent return on $63,700,000.00; that he has taken the rate of depreciation as the company uses it in its books for that part of the property which is depreciable, and for the acreage added back all of the acreage acquired since the beginning and divided that by the amount of gas already taken out of the field, plus the estimate of Mr. Davis of what is in there, which is somewhat higher than the company uses, and used that instead. I just proceeded to this extent, that the depreciable property I have given the rate [fol. 606] which is applicable to less than a twenty-year life. For instance, the record isn't clear, so far as I can see, that the transmission system wouldn't last until the end of the field. If testimony should be introduced that it wouldn't last for eighteen years, why then the rates might have to be increased a little, for the replacements that would have to be made, but it is already shown in the record that on a basis of Mr. Davis's exhibit the rate of production or rate of sale, at the present time, can not be maintained any longer than eighteen years, so it doesn't look as if the major part of the transmission system would have to be replaced again before the exhaustion of the field. You may have a situation here that the Louisville Gas & Electric Company or the Central Kentucky Gas Company will not live out even eighteen years. I don't know what the premise of the company is on that, but in that case their investment will go out during that period, and if the existing transmission system cost is handled on the basis I have handled it you would have the dollars you have put into it when it does go out.

In regard to the method of calculating depletion and depreciation only upon actual cost, what he was trying to [fol. 607] bring out is that the purpose of depreciation and

depletion reserve is not for the purpose of giving a profit to the utility. If you provide for that piece of land or acreage at the rate which will eliminate $50,000.00 from your capital account at the end of the period, and $50,000.00 is found to be the fair cash original cost, the public doesn't suffer at all; but where the discussion comes in here that this company takes out of its property account, not the fair value which the commission found, but it takes out the book cost, and the difference between that rate or that amount of depletion, and the book cost and the value the commission allows, cannot be accounted for on the books at anything but a profit, and that is what has been done in this case. Assuming that you give a return of 16⅔ per cent, and assuming that 8 per cent is for return, you have 8⅔ per cent for depreciation and depletion. Now, what does the company do with that? It doesn't set that up on its books. It provides for depreciation and depletion regardless of allowances made by the commission, and in dollars and cents it means this, that in the first case, where the $30,000,000.00 valuation was set up, I think the books will show that the original cost of the physical property was given as $22,000,000.00 or $23,000,000.00. Now assum- [fol. 608] ing that there are two or three million dollars of non-depreciable property, like, for instance, the salvage in the system, the land, etc., and assuming further, that that will bring it down to $20,000,000.00, you have then given the utility 8⅔ per cent on $10,000,000.00 of non-depreciable property, and in accounting, the company gets not only the 8 per cent on $30,000,000.00, or $2,400,000.00, but it gets also 8⅔ per cent on $10,000,000.00 of undepreciable property, which will be $870,000.00 additional return. Now, if the company relieves its property account of a cost which corresponds to the basis on which depreciation and depletion is allowed then it gains no profit on its transaction, but if there is no gain to the company in that transaction, it doesn't seem to me there would be any advantage in raising rates just to give a depreciation and depletion allowance on an amount that doesn't represent investment in the property.

Commissioner Lewis: We are talking about depletion, not depreciation. Suppose "A" had gone into the utility business; he would have had a return at the time "B" did.

On your theory he would have had to return $5,000 undepreciated, but what about "A"?

[fol. 609] A. In both cases it ought to be the fair cash original cost at the time the property came into use.

Commissioner Lewis: The markets have been known to change very rapidly, speaking of fair cash value—All right, let it go.

The Witness: I wanted to make it clear that there should be no difference in treatment of depreciation and depletion.

That the reason for assigning one-half of the net profits from the gasoline business to the natural gas business is that, in the first place, there is a joint use of facilities. The gas is taken out of the ground from acreage that costs the company money; that gas is transmitted or gas is also taken out of the ground through wells that also call for an investment; the gas used is piped to the gasoline station; the acreage which is called upon to yield the gas costs the company considerable every year in rentals, for which the gas department is assessed; royalties are paid; it costs something to operate and build a transmission system, and that would seem to call for a division of those items between the two projects. The exact amount of the money is rather difficult to ascertain, but some division it would appear would have to be made. The cost account-[fol. 610] ing principle is not to consider one of two major products as a residual product, and the other as bearing all the cost. Some fair division has to be made between the two major products. Now then, looking at it from the purely economical side, you have this situation, that from 80 to 95 per cent. and possibly more of the gasoline in this country is manufactured from the crude oil refining process. That means that the crude oil refinery will, in a fair competitive market, determine the price because it will be that cost of production which will determine the price on which they can sell their gasoline at a profit. Now, that makes it a question of relative costs between the natural gas gasoline process or the natural gas extraction process and the crude oil process, and as long as there is a differential the natural gas producers will get the difference in profit. Now you are giving him a very large differential advantage, when you do not assign any costs at all for the raw product he uses in the manufacture, and that is natural gas. In

the crude oil process, as I understand it, there are a great many economies being perfected, and the cracking process I understand is being made more efficient. That means that the margin between the natural gas extraction process and [fol. 611] the crude oil process will decrease, if the natural gas process does not also become more efficient. Now the records of the company show, as I recall them, that each year there is a gain in the amount or yield per thousand feet, which goes through the gasoline extracting station. So it shows that that method is becoming more efficient, but it is a question as to which process is becoming relatively more efficient. Anyone going into the question of extraction from natural gas would therefore be willing to pay the natural gas producer that price which would allow him to meet the crude oil refiner's price. In other words, he would pay that much more for the natural gas rights or for the right to extract from natural gas the amount represented by the difference in his cost of production and the cost of production by the crude oil refiner. He wouldn't pay absolutely that differential, because he would be taking all the risks of the manufacture and he would be taking the risks over a series of years, and of course he would want some leeway because he wouldn't want to take all the risks and get nothing of the gain going into it; but that would be the principle that would determine how much he would pay for that right. Now, in the previous hearing I have attempted to show, from figures of the Federal Trade [fol. 612] Commission, that that right would be more valuable than the fifty per cent. Whether or not those figures would obtain at this time, I am not able to say, but the principle would govern just the same, and if there is no differential there would be nothing to split. I think the question is merely a question of determining a fair basis for paying for the right or privilege of extraction to the natural gas producer.

Cross-examination:

That ninety to ninety five per cent. of the gasoline consumed is from crude oil production; that he obtains these figures from the Geological Survey; the last time he looked it up it was 90 per cent., and his recollection is that recently the figure has gone up; that naturally this would be the

case, or tend to be the case, because the natural gas that is used in the extraction privilege cannot increase when you use the gas for public utility purposes, because the consumption determines the rate at which you are going to take the gas out of the wells, and that remains more or less stationary; that the basis for determining the value of the extraction privilege is the difference between the cost of production from natural gas and crude oil; that that can't be determined at any certain moment, but over a period [fol. 613] of years over which an investment will run; that assuming a situation such as exists in the last four or five years in the production of gasoline from natural gas, you might come to the conclusion that there would not be any differential, or you might assume that the former conditions would return; that he does not know whether there is any differential today, but from mechanical calculation he would say it is better today, but he would say that it is mechanically true that if the present trend continues that at the end of the next year there will be no differential at all, but that he could not say whether former conditions will return without investigation as to the whole situation; that he understands that the production of gasoline from crude oil has been wonderfully improved in the last four years; that he understands that the cracking process has resulted in getting more gasoline from the oil; that he does not know how much more; that he has not gone into the question to determine what is the cause of the low prices at the present time, and that before he could say whether or not extraction of gasoline from natural gas was a profitable business at this time he would have to give consideration to all of these elements; that assuming a price of 6½ [fol. 614] cents for gasoline to the producing company he would not think that it would be profitable to produce it, but that he would have to make some computations; that a profit of $1,000 a month on the operations of the Virginian Gasoline & Oil Company would not be considered profitable for that month, but you couldn't gauge profit that way, it should be taken over a series of years; that even if this was a pretty fair average over a period of four years he would not conclude that it was a reliable figure; that it is just like other industries that have gone through a period of deflation; that for instance the rubber industry has gone down

for several years, the sugar industry has gone down since 1920, but that does not mean that sugar refining is not going to be profitable; that is the thing you have got to look at; that it is true that the price of gasoline produced from natural gas is regulated by the price of gasoline produced from crude oil; that if an investigation showed that by the use of some process there had been a uniform tendency downward in the price of gasoline, and it was found upon examination that the production of gasoline from crude oil has been so increased that there is now being extracted from the oil production twice as much as there was four [fol. 615] years ago by an improvement in the process, that this would justify the conclusion that the production of gasoline from natural gas was not profitable at this time, but it would not mean that that conclusion would be good forever, or that the natural gas gasoline extraction process would have to be discarded; that if he was examining such a property with a view to advising a purchaser as to the purchase of it he would not give advice until he knew the cause of all the conditions showing the decrease in price, and that he would have to make up his mind whether the trend was definitely downward, and that there would not be any differential between the crude oil price and the natural gas price; that he would conclude that if twice the amount of gasoline was produced from the same quantity of crude oil because of improved processes, this would have something to do with the price of gasoline, and that the privilege of extracting gasoline from natural gas would be much less desirable, but that he thinks the fifty per cent. rule should apply as you go down; that he adopts the fifty per cent. rule because the testimony seems to support it; that any percentage rule would be arbitrary, and that he selects it because the commission has done so before, and because the Supreme Court has approved it, and that is the [fol. 616] only basis; that he worked it out independently before and came to a higher figure than fifty per cent.; that he can't say just what the percentage was; that he does not think it would be better to determine the value by a share of the gross receipts, because the value of the extraction privilege is determined by the net earnings that will come out of the product, which is the gasoline, and that is the best test of value; that is the test that is applied in the

commercial field generally; that it might be more stable if the privilege was paid for in a part of the product; that the price of gasoline has always been a very fluctuating thing, but not more than any other competitive product, he would say; that it has fluctuated more than the price of natural gas in Charleston, but natural gas is not a competitive product; that good administration would dictate that a stable basis be arrived at for the purpose of rate making, so long as it was fair; that the amount taken into consideration as belonging to the gas company from the manufacture of gasoline is a considerable item, amounting to some $000,000.00 for the year 1923, which is the amount taken into consideration by him, and if a rate is fixed upon that [fol. 617] basis it would be upon the assumption that $000,000.00 would be the amount made at one-half of the gasoline earnings each year; that in case the earnings from gasoline fell off there would be no way to make up the deficiency; that in case there was a substantial falling off in the earnings from gasoline the deficiency would have to be made up in the rate from the sale of gas; that by reference to Exhibit No. 8 it will be found that fifty per cent. of the gasoline net has only fluctuated in the last four years between $1,000,000.00 and $000,000.00, and if the rate is fixed in accordance with the company's theory, in every example there has always been an excess, and that excess can take care of any contingency of this kind on the showing that has been made; that he has not gone into the question of whether or not the company is getting more than it is entitled to earn; that he is not trying to determine that question, but is giving only the one factor, and that is the cost; that he has made no effort to find out what the present value of the property is, nor does he know what it is at the present time; that he does not think it is three times or ten times what it cost; that he does not fix the value at $16,000,000.00; that is just a calculation to show what the [fol. 618] depreciated investment would be if you applied the depreciation and depletion basis as one of the factors, but that is only one factor, and Mr. Uebelacker's reproduction cost is another evidence of value too; that he has furnished the original cost as one element of value; that he has attempted to show that the way the property was put on the books did not reflect what it actually cost in cash; that

this company put on its books the property bought from the United States Natural Gas Company at $2,000,000.00 more than it paid, and that he is showing this to indicate that the books do not reflect the original cost; that when $5,000,000.00 worth of securities were issued he does not believe it meant that they were worth five million dollars; that he does not believe the purchasers considered a certain measure of appreciation at that time and figured over a period of years they might be able to pay out on that basis, but they paid $2,000,000.00 more in par value of securities than the people before them paid for it; that he thinks when the directors of a corporation buy property the company ought to get the benefit of their good purchases; that the commission should take into consideration the fact that its [fol. 619] property was turned over to the company by two of its directors in determining whether the original cost is properly reflected by the books; that he attempts to show that the property that was turned over was acquired at less figures than the books show; that when the company bought the property for $5,000,000.00 that was $2,000,000.00 more than the people they bought it from paid for it; that in the case of the United State Natural Gas Company, from which part of the property was purchased, it was subject to the laws utilities are subject to now, and that the procedure of the commission in determining the original cost of the property is to determine the original cost not only to the immediate company but to the predecessor company; otherwise you have this situation, that every time it was to its advantage the company would reorganize and create a new company and transfer the properties at new values; that it is the value at the date of acquisition by a company engaged in the public utility business; that when you pay for property in securities it does not mean that the company valued it at the par value of the securities; that he is not going into the question of what the securities were worth, but simply stating the facts; that he is presenting his figures simply for the purpose of giving the commission [fol. 620] the original cost, to be given such weight as the commission may determine; that he thinks that it is entitled to some weight; that the cost of getting leases years ago is entitled to some weight as to the cost now, because

a lot of the leases that are on the company's books have been acquired recently, and to that extent it has an important bearing on value; in addition to that, there is some measure of appreciation taken up there in the beginning, and that when the company was organized, in 1909, and fixed the par value of its securities, it had in mind not only immediate profits but the ultimate profits; that no profits were received out of it for seven years; that there was originally put into the property the bond money by the assumption of debts of the old United States Natural Gas Company and some debts created by the old company; that there was risk in the investment originally, because when the re-financing took place in 1909 they were able to get the debentures readily, and that the stockholders bought them all and carried them themselves and took the risk, and that ought to be considered in the rate of return or the going concern value; that he fixes the going concern value at $3,000,000.00; that when he figures out the return the company should have he does not go into the [fol. 621] question of going concern value, but that there is included in the valuation $3,000,000.00 for going concern and $900,000.00 for working capital; that the $3,000,000.00 going concern value is a part of the thirty odd million dollars valuation for the entire property, and that this is true of the $900,000.00 working capital, and that all of his calculations as to rates of return are based on the assumption that the property is of the value indicated in his reports; that if the value is more than that then his rate of return is wrong; and also is based upon the allowance of 5.3 per cent for depletion, deterioration and amortization of property, and if this allowance is found to be inadequate his rate of return would be subject to that finding; that the books indicate that there is $11,000,000.00 depreciation reserve on the books; that the company has not, as a matter of fact, this money, but that it is invested in property, and that the investment was necessary to keep the plant up to 100 per cent; that he assumes that the plant that the company has today would deliver no more gas to its customers than the plant it had three years ago, and that in order to have a plant today that would deliver the same amount of gas that the plant did three years ago it would be necessary [fol. 622] to spend several million dollars for entirely new

units, including several new compressors; that he thinks it is true that the company sold more gas in 1916 than it has ever sold since; that he does not know whether the company will ever get back to the amount that it sold in that year or not; that he knows that it has not done so, and he knows that the company has spent in the intervening years large sums of money in additions to the plant; that it is likewise true that the company has spent in producing gas a great deal more money for each thousand cubic feet than it did a few years ago, but that that is the history of public utilities generally, so far as price changes affect the same; that he allowed a rate of .65 cents per thousand for depreciation on leaseholds; that he did not value the gas in the ground; that this is not based upon the value of the gas in the ground; that his theory of depletion and depreciation is not based upon the value of the property, but upon the cost of the property; that the amount of .65 cents per thousand is not representative of the value of the gas in the ground in any sense, but is for the purpose of keeping the investment, the book cost of the leaseholds, intact; that assuming that it would cost 5 cents to produce the gas and bring it to the top of the ground and deliver it [fol. 623] into the transmission line, the company would get that and in addition a return on the property, which would have to be considered; that there would have to be added to this the return on the value of the leaseholds; that he did not find the value of the leaseholds, but only found the book cost, and that this is about $7,000,000.00, roughly, and that the rate of return would be allowed on this $7,000,000.00 or on whatever value is fixed thereon; that assuming that the $7,000,000.00 was a fair value, that would amount to about 1.2 cents a thousand—a little over 1½ cents per thousand; that if his figures were adopted it would be true that the company would receive for the gas delivered in the transmission line 7.15 cents upon this basis, subject to an allowance for taxes the company paid, but that he has not allocated that to the investment; that he does not think that the people who are buying gas in the field at 18 cents are willing buyers; that he does not think the Hope Natural Gas Company is a willing buyer, but is buying it under presure; that it may be that they are willing to pay that amount for an additional amount of

gas to tide them over in cold weather; he knows of some companies that would be willing to pay any price so that in [fol. 624] the long run they would not get into trouble, for the privilege of having gas in cold weather; that he knows of an instance in Kansas several years back where they froze on several days and had extreme hardships on account of that, and that company, rather than have its customers suffer those hardships, would pay any price for gas; that that concerned the peak load condition, and it determined what the price is to be; the peak is one of the things you have to determine when you figure out what you are going to pay; that on the basis of the figures he has made the company has a net profit, after depreciation, depletion, and so forth, of $5,143,000.00; this is after deducting $1,399,000.00 for depreciation and depletion; that in arriving at this figure he has deducted $312,000.00 for income taxes; that this figure should not be $680,000.00, for the reason that for the purpose of income taxes deductions are allowed which are not considered in rate regulations; in the case of mines and natural resources the company is entitled to deduct the depletion on the added value which comes from the fact that the discovery value is greater than the cost; that for the purpose of income taxes returns are based on the actual present value of [fol. 625] the property; the deduction for depletion for income tax purposes is merely to determine the net taxable income which accrues; that it would be the same thing in a case of rate making if you depleted the value instead of depleting the cost, but the income tax bureau has determined that only as the basis for taxation; that the income taxes calculated by him would be on the basis of the taxable income about $2,500,000.00.

Redirect examination:

That he has made up a statement showing the gasoline gross earnings and net revenue for twelve months ending October 31, 1924, and offers the same in evidence as Jirgal Exhibit No. 9 (which is attached hereto and made a part hereof). The statement is prepared in the same way as the statement for the year ending December 31, 1923.

Said witness testified in open court on the hearing in substance and effect as follows:

That he has made some statements showing the distribution of net earnings of the company before and after considering delay rentals in the allocation of the company's property to the several cities and the state of West Vir- [fol. 626] ginia, and the results thereof; that the first table is based upon the principle of assigning to the present companies a charge which would be comparable with the rate which the cities in the state of West Virginia have to pay for gas; it is somewhat different from the commission's adjustment, due to the fact that the commission applied a different principle for the increase in the revenue to the parent companies; in other words, they applied a principle which had no reference to what the cities in West Virginia paid for the gas, or the consumers in West Virginia. In this table the allowances for depreciation and amortization have been figured on the original cost of the property; that there is at the bottom of the page a table to show what the net earnings for the entire property, and for the state of West Virginia, would be if capitalized on an 8 per cent. basis and a 9 per cent. basis and a ten per cent. basis; that the amount capitalized on an 8 per cent. basis, before you deduct the delay rentals on unoperated leaseholds, would be $63,813,000.00, and that after these are added back on an 8 per cent. basis it would be $71,177,000.00; that the West Virginia property, before these rentals are added back on an 8 per cent. return would be valued at $14,817,000.00, and after they are added back, $16,666,000. The [fol. 627] said statement is introduced with the evidence of the witness as Exhibit Jirgal 3 J. C. No. 1, and is attached hereto as part hereof.

That the earnings from what is called domestic and retail industrial service is something less than one-fifth of the total revenues of the company. The company does not charge to certain of its parent companies a rate which will sustain these figures; there is an adjustment of a million and a half dollars here to bring the rate of the parent companies up to what the consumers in West Virginia are paying; that the public service revenue in West Virginia is $1,333,329.00; that is the thing that goes up or goes down

according to the decision of the commission or of this court; that the matter that is affected by the decision of the commission or of the court in this case will be the returns from the public service business in West Virginia, which in this statement is represented by the $1,333,000.00.

That on the second statement are shown an adjustment of parent company revenue, the amount which the commission sets forth in its decision, and there is shown for depreciation and amortization the amount that the commission allowed. In other words, the second table shows [fol. 628] the amounts which the commission allowed instead of the amounts which the protestants claimed before the commission. It also shows that the net earnings are before adding back delay rentals and after adding back delay rentals. The statement is introduced with the evidence of the witness as Jirgal Exhibit 3 J. C. 2, and is attached hereto as part hereof.

That the earnings in the state of West Virginia upon the findings of the commission will support a valuation for the West Virginia property, on an 8 per cent. basis, of $13,110,000.00, and for the whole natural gas service of the company of $64,640,000.00, and after adding back delay rentals would sustain a valuation of $14,959,000.00 for West Virginia and of $72,013,000.00 for the whole company; that after adding back the delay rentals in West Virginia, on the basis of 9 per cent., it would sustain a valuation of $13,297,000.00; on the basis of 10 per cent. it would sustain a value of $11,967,000.00; and the corresponding figures for the whole company are $64,080,000.00 and $57,611,000.00 on the basis of 10 per cent. return.

That the general practice, and the practice that is subscribed to by the commissions, in regard to handling the [fol. 629] overhead cost of financing, is to treat what has been termed cost of financing as bond discount and expense and stock discount and expense; it never appears in the property accounts under any uniform classification, and it is considered a suspense item, to be written off over the life of the bonds. In other words, if this item pertains to bonds, the item is carried under suspense account and is written off periodically with the bond interest; that is, the item is deferred when it is incurred and written off over the life of the securities to which it pertains, to

the income account; it has nothing to do with capital; that the practice of the company has not been uniform in the matter of treating bond discount; that in their last bond issue they charged it as he states, and when the bond issue became due they wrote it off through the surplus account; but if you treat it as an item of overhead expense then you have to properly consider in the rate of return the fact that there was no discount in the stocks or bonds; that what he means is that suppose you did sell half your capital that came from bonds and half that came from stocks, and you sold each of them at 90, and they were 5 per cent bonds and you were selling them at 90, and considering the term of the bonds it meant that your capital would cost you 6 per cent instead of 5 per cent, if you treat the discount as [fol. 630] is suggesed you can only consider in your later return that the capital costs 5 per cent and not 6; that in handling the matter it would make no practical difference if you put the bond discount or cost of financing into the capital account and then allowed say an 8 per cent return, or allow the actual amount of money received as the capital account and increase the return to say 8½ per cent.

Cross-examination:

That the figures shown in Exhibit No. 1 for gas revenues in West Virginia were taken from the books of the company the actual receipts shown on the books being $2,310,971.00, which is shown in the statement at $2,318,831.00 because of some minor adjustments; that the half of the gasoline earnings which he added, of $934,395.00 all told, were for the year 1923, and that he allocated $234,626.00 of this to West Virginia; that he made no computation on the basis of 1924; that he did in his testimony before the commission bring the gasoline earnings down to November 30, 1924, and that the figures for the year 1924 were before the Public Service Commission; that the amount of $1,495,497.00 which he has added is the average rate paid for gas [fol. 631] in the state of West Virginia, deducting therefrom 4½ cents as representing the cost of distribution, and thus determining what would be a city-gate rate, and on that principle adjusting the rates of the parent companies; in other words, increasing the rates of the parent companies by the difference between what that average per thousand

cubic feet rate would be on that principle and the 7 cents which they were paying.

(By agreement of the parties there was introduced, to be considered as part of the evidence of this witness before the Public Service Commission, a statement bringing the gasoline earnings and expenses down to December 31, 1924, filed as Exhibit Jirgal No. 9-A, which is attached hereto as part hereof.)

W. J. Hagenah testified in substance and effect as follows:

That he lives in Chicago, Illinois, and is a member of the firm of Hagenah & Erickson, specializing in public utility analytical work, such as the making of appraisals, cost analyses, rate studies and financial investigations of all forms of public service corporations; that he has been en- [fol. 632] gaged in public utility analytical work for approximately 21 years; that his first experience in this field was with the state of Wisconsin, where he had charge of a number of public utility investigations before the Railroad Commission of that state, which was created as a public service commission; that in 1907, when the public service commission law of that state was passed, he was made rate expert, which position he held until June 1910, when, on the invitation of the city of Chicago, he was given a leave of absence to go to Chicago for the purpose of making two public utility investigations. These covered the Chicago Telephone Company and the Peoples Gas Company of Chicago. That he concluded this work in July 1911, and then engaged in private practice in Chicago, alone until May 1916, when the firm of Hagenah & Erickson was formed.

That during his twenty-one years' experience in this field he has made appraisals, cost analyses and rate studies of public utilities in practically every large city in the United States and many large cities in Canada and other countries, the aggregate value of these properties being in excess of two billion dollars; that he has made appraisals of natural gas properties and made rate studies of such utilities [fol. 633] covering properties in West Virginia, Ohio,

Pennsylvania, Kentucky, Louisiana, Arkansas, Oklahoma, Texas, Kansas and California; that he has represented the public service commissions of Wisconsin, New York, Tennessee, Alabama and North Dakota, and has made a large number of studies in the United States and Canada; that the investigations that he has made of public utilities furnishing gas have included both natural gas and artificial gas; that his firm has been engaged on some natural gas case or other covering practically all the time since 1917, doing more work of this character some years than others, and that the natural gas companies which he has appraised are probably worth over one hundred million dollars.

That he has studied the appraisals made by others of the properties of the United Fuel Gas Company and has made various investigations of accounting exhibits and has made some accounting exhibits himself on behalf of his firm since 1917; that he was employed by the cities of Huntington and Charleston on a previous investigation of the rates of this company; that at the instance of the cities of Huntington and Charleston he has analyzed the inventory and appraisal of the United Fuel Gas Company's property as made by [fol. 634] Messrs. Ford, Bacon & Davis and has made sufficient studies to make him believe that some adjustment should be made in the appraisals filed by them; that he has prepared a memorandum report covering this subject in summary form; that he has accepted the inventory and unit costs of Ford, Bacon & Davis, and in the report explained the examination he made and why he accepted their inventory and unit costs, and that said report is filed as part of his evidence marked Hagenah Exhibit No. 1 (which is attached hereto as part hereof).

By way of a brief explanation of the four page descriptive text which accompanies the exhibit, I may say at the request of the cities of Charleston and Huntington I, with two assistants, made a somewhat extensive check of the books of the United Fuel Gas Company, for the purpose of determining, first, the substantial accuracy of the inventory as made by Ford, Bacon & Davis, and, secondly, to ascertain the unit costs that they had incorporated in their appraisal, whether they correctly reflected the reproduction cost on the basis which they state in their inventory. In every instance, the checks we made agreed exactly with

those made by Ford, Bacon & Davis. These checks covered random checks of the most important classes of property, [fol. 635] such as transmission mains, buildings, local distribution systems and compressor stations. We found no error in any instance as to the unit costs. Our study extended over the entire history of the present company, in respect to all the larger classes of property, and I am able to state that the unit costs used by Ford, Bacon & Davis are correct as reflecting the basis which they state in their report or inventory. My only point of difference with Mr. Uebelacker's report goes to certain questions of principle, as, for example, the value which he assigned to the leasehold property, the existing depreciation in the physical property, the allowance for overhead charges and the subject of going concern value. In this memorandum, Exhibit No. 1, I have substituted the book cost for the gas leaseholds and gas rights, as determined by Mr. Jirgal; this item was $6,732,920.00 and appears as the first item at the top of the page 1 of the statistical data; that is a mere substitution of the book cost in place of the appraised value found by Mr. Uebelacker, as I think that more nearly and more accurately shows the true cost than the valuation figure which he adopted.

As to the per cent. condition of the property, I have differed from Mr. Uebelacker in principle. He has de- [fol. 636] termined or found and shows the per cent. condition of the property as determined by the inspection method. This is correct and is the proper method laid down by the United States Supreme Court for properties which have a more or less continuing existence, such as other public utilities, namely, artificial gas companies and electric companies, where the owners are under obligation to replace the property as it wears out in service. In the instance of the United Fuel Gas Company, the life of much of the property is determined by the life of the field; in other words, on the expiration or exhaustion of the gas reserve, the property devoted to the exploitation of the field would have very little value except for salvage and that would be of doubtful amount because of the cost of reclaiming it. It is my view that the property which will probably be replaced before the expiration of the gas reserves, which the company's engineers estimate to be

eighteen years, will therefore be equalized through the use of the inspection method; those classes of property whose life is limited by the life of the field will not have to be replaced, and in those instances the retirement of capital partakes more of the amortization principle than it does of the straight line depreciation; whether we call it [fol. 637] amortization or depreciation, a reserve is built up with a view to maintaining intact the integrity of the investment. If this is the rate at which it is being retired through charges to the company, to that extent it is a return of capital to the owners and is not property further subject to the full measure of return. If we take the instance of the transmission systems, which are not of a doubtful life, instead of eighteen years, the amount by which that property is being retired through the depreciation reserve, represents a retirement of the investment,—the property will not be replaced, and therefore the capital is in fact being returned to the owners. In those instances I have applied the straight line method.

The details of this memorandum, extending from page 3 to 15, inclusive, are an exact copy of Mr. Uebelacker's figures, in so far as the reproduction cost new is concerned. The per cent. condition, however, differs according to the probable future life of the property. In those instances where the property will most likely be replaced before the expiration or exhaustion of the gas fields, I have accepted the Ford, Beacon & Davis figures as indicated by a star for each of the items. In those instances, however, where [fol. 638] the life of the property will be cut short by the exhaustion of the field and is therefore for the same life as that of the field, I have adopted a percentage which reflects the reduced value on the straight line basis. This results obviously in a reduction of the value of the property. If this principle is adopted by the commission the reduction is approximately $2,000,000.00, more or less; if the inspection method is followed throughout and that is accepted as the rule of this commission, then the results as determined by Mr. Uebelacker are correct on that basis.

I made one further change, which I think should be considered in determining the present value of this property. I believe the general overheads which Mr. Uebelacker has incorporated in his appraisal report are rather large; they

range from 21½ per cent. to as high as 26 per cent. on the transmission system, being 22 per cent. on the distribution system, and on the general property he has made, and properly so, substantial allowances for intermediate overhead charges, which he calls the direct overhead charges, on page 24 of his report, marked "Uebelacker Exhibit No. 1." These items cover many of the costs that are generally considered as partaking closely of overhead charges and [fol. 639] direct costs. When, however, they are included in the direct costs to the extent he had made provision for, then I think the general allowance set forth on page 24 is more than should be allowed, because of the two items which he has included; I think an allowance for overhead charges to the amount of 18 per cent. is more correct and more reasonable, that percentage applying to all of the physical property, but not to the value or book cost of the natural gas reserves. By using my percentage of 18 against Mr. Uebelacker's percentage in excess of 22 per cent., there is a considerable reduction in the appraisal results. Mr. Uebelacker's total allowance for general overhead allowance, as shown on page 48 of Exhibit No. 1, is $7,063,000.00; against this my judgment is that $5,398,000.00 is correct.

There are corresponding differences in regard to the reproduction cost of the property less depreciation. Mr. Uebelacker has made no direct allowance in his report for going concern value, and expressing the opinion that there is a certain amount of depreciation in the property, which has not impaired its efficient operation, and that, for practical purposes, consideration will be given to the going concern value by giving greater weight to the reproduction cost new of the property as the proper rate base, it is my [fol. 640] judgment that the reproduction cost new, less depreciation, more accurately reflects the proper rate base, in so far as the appraisal is a factor in determining the present value of the property, and I have therefore added to my finding an item of $3,000,000.00 to cover the going concern value, which is practically 10 per cent. of the appraised present value of the physical property. I think the allowance for going concern value should not be measured by the extent of the depreciation, even though if true in this case that the business has not extended so far

as to impair the efficiency of the property's operation. I believe the existence of going concern value in a well managed, well producing property is well evidenced, and the only question to be considered is the reasonable measure of such going concern value. I have made many studies of this subject and, while there are various factors that may be considered, there is no one method which definitely represents the amount of any one company at any one time. From an analysis of all important court and commission decisions on this subject, I find in the majority of instances the sum the authorities have allowed, after considering all the evidence, has been approximately 10 per cent. of the value found for the physical property, and, [fol. 641] without making a study of the various angles which may have a more or less direct bearing on this theory, I have accepted the 10 per cent., which, in this case, is $3,000,000.00. I find as the result of Mr. Uebelacker's report that the present value of the property, based on reproduction cost, less depreciation, as of December 31, 1923, including an allowance for working capital and my estimate of $3,000,000.00 for the going concern value, is $34,692,100.00. Exhibit No. 1 does not contain the item of $3,000,000.00 for going concern value. I call attention to that because I want it to appear I have added $3,000,000.00 for this purpose, and wish it to be regarded so in Exhibit No. 1.

That he has accepted the item of $990,000.00 for working capital, which he believes from an examination of the company's accounts conservatively expresses the working capital allowance necessary; that he has taken the book costs of the leaseholds of gas rights rather than the appraised value, for the reason that he thinks the appraisal opinions expressed on behalf of the company are all based on a wrong method for determining the value of the property charged with a public interest and devoted to the [fol. 642] public interest, under state regulation; they have all used the so-called economic exchange theory of value, which the courts and commissions have repeatedly stated does not apply in determining the value of public utility property, in view of its public business depending on natural resources. The exchange theory of value is explained at considerable length in the Economic Works of John

Stuart Mill, Jevons and Taussig. It means the power of one product to command the acquisition of other commodities in terms or money exchange as of a particular date, unaffected and unrestricted by statute or artificial condition. The exchange theory of value applies in determining the value of coal lands, or iron ore, of timber lands and other completed products generally, such as buildings and dry goods. It does not apply to the appraisal of a property charged with a public service and under state regulation, because the minute it is changed you make impossible the finding of any value other then the one you start with in your assumption.

The exchange theory of value was originally adopted by the railroads in cases involving the determination of proper freight and passenger rates; that is, they proceeded on the theory which has been somewhat abused by interpretation, [fol. 643] that a proper rate structure was all the traffic would bear. The courts held that could not be made the proper basis for rate making purposes, because the moment you started out with the assumption that a certain part of the rate fabric was justified on certain conditions, the adoption of that resulted in the rate on which the assumption was based. That theory is discussed at some length in the Minnesota rate case by Justice Hughes. It has been considered in the appraisal of water power companies, where public utilities owning such natural resources have attempted to capitalize their savings resulting from the use of water power as compared with the next best available substitute, namely, steam power. Commissions have frequently held the company could not capitalize on that basis; they have recognized it to some extent; some arbitrary divisions have been made between the public and the owners of the resources, but the property can not be appraised for rate making purposes on the basis of capitalizing the savings as compared with the next best available substitute.

That he has made a study of the appraisals made by Mr. Ralph E. Davis and Mr. Uebelacker of the gas and leaseholds of this company; that he did not go into the details [fol. 644] of the character of the leaseholds or rights, but merely adopted the figure on the company's books, to wit, $6,200,000.00 in round numbers, and assumed that it related

to the identical property which Mr. Uebelacker and Mr. Davis appraised; that he gave no special consideration to the particular character of it; that he has prepared a report in which he has reviewed both the testimony and exhibits of Mr. Davis and Mr. Uebelacker and reduced his views respecting the matter to writing; that there are no statistical computations involved, but a mere discussion of the nature of the theory in application to the purpose for which they used it, and the improper use, or inaccurate use, of the data compiled by them in support of their theory, which report he files as part of his evidence, marked Hagenah Exhibit No. 2 (and which is attached hereto as part hereof).

That Mr. Davis, through the application of the exchange theory of appraising natural gas properties, arrived at a figure of the fair value of the gas reserves of $32,458,000.00. The basis he used is clearly set forth in his report, from which I have copied a paragraph on page 1 of this memorandum. As it goes to the heart of the entire problem I will read that, and it will qualify and also shorten the later [fol. 645] explanation. He says, "The value of a property capable of producing natural gas is conceived to be measured by the prospective earning power of the property placed at its most advantageous use. To determine the value of such property it is necessary to consider the present use to which the property is placed and to compare this use with other uses available. If the present use is found to be most advantageous, the valuation will be dependent upon the prospective earning power of the property in its present use. If a more advantageous use can be found available, it is necessary to determine if such use be competent to return a greater earning and the amount of such earning."

This states very clearly that Mr. Davis says that if any other use for natural gas can be found than that to which this company is now devoting it, and it will produce a larger measure of revenue, then the property devoted to the public should be appraised on such other basis and including in that the rate base for such service. That is the theory precisely condemned by the entire experience of public utility valuation. In this instance Mr. Davis, to apply his theory, finds that if the entire production of this company

could be piped to the Pittsburgh market, it could be sold [fol. 646] to the steel industries at a rate of 35 cents per thousand cubic feet. He arrives at that 35 cents per thousand cubic feet by determining what the cost of the service would be on the next most economical basis. That he finds to be the producer gas, artificially manufactured. He shows in his report what that cost would be, as to the fixed costs, on a hypothetical basis, the wages of the men operating the plant, and the cost of the coal, including the freight, and on the basis of price levels as of December 1923 he finds that producer gas could be manufactured for the steel industries at 35 cents, therefore any saving the United Fuel Gas Company could obtain on the basis of selling its gas in Pittsburgh, after deducting operating expenses and fixed charges incidental to the bringing of the gas there he multiplies over a period of eighteen years by this profit per thousand cubic feet, and since this revenue is to be obtained over a period of eighteen years in the future, he applies a compound discount factor; he makes a deduction of Federal income over the period of eighteen years, and arrives at a present worth of the field of $32,458,000.00.

[fol. 647] I have, with some care, developed the economic argument and the practical criticisms pertaining to this method, believing it would save time for all parties and also place the issues more clearly by setting them up in this form. The substance of my criticism is two-fold. First, the theory does not apply to the appraisal of public utility property. Mr. Davis says it has been used in the appraisal of mineral land for the purposes of sale and taxation. That is correct, and it is properly used there, but the important fact is that this is not a case of taxation and sale. This is a case of rate making, and the more important fact is that the theory in this particular class or character of property. Secondly, the data Mr. Davis has applied and on which he has compiled this theory is open to severe criticism, as to the reasonableness and the likelihood that they will continue long to reflect the cost of manufacturing the producer gas; also any questions as to whether this company could supply the steel industry in Pittsburgh.

I have already referred to some of the matters contained in this exhibit in answer to Judge Rummel's previous questions. On page 4 of this Exhibit I discuss at some length

[fol. 648] Mr. Davis's analysis of the Pittsburgh market. There are certain significant sections in his report. In one section he says:

"We find that today the steel industry of the Pittsburgh district is emerging from the period when natural gas was largely used as a fuel and entering a period in which bituminous coal supplies the fuel requirements formerly met by natural gas. It is evident that a critical period in the use of natural gas in the steel industry of the Pittsburgh district has been reached."

That is correct and is exactly the situation that now prevails in the Pittsburgh territory. The conditions there are that the natural gas companies have lost a large part of the steel business, and are losing more of the business. The Jones & Laughlin Steel Company have recently entirely abandoned the use of natural gas. This business can not be recovered by the natural gas companies, and one of the reasons is that the steel companies of Pittsburgh can not rely on the natural gas business is shown by a table or chart taken from a recent report of the United States Department of Commerce, showing the extreme fluctuations in the demand of the steel business, illustrating the old phrase, that the steel business is either "Prince or Pauper." The [fol. 649] various figures reflected by the orders listed from month to month indicate that the peak in the report falls far below such gas capacity in the regular cycles of depression, and it is my view that an indsutry, subject to such extreme fluctuations, could not carry the entire gas supply, if it took a considerable amount of gas to meet its maximum demand, in periods of high operations, that it would not be able to take the United Fuel Gas Company's supply at periods of depression, and if the capacity of the companies were adjusted to meet the depression in operations, then the steel companies would have to prepare for peak production, and that this condition has resulted in the steel companies making themselves independent of the natural gas supply.

I have examined the report of Mr. Davis in which he says that as an alternative to selling gas in the Pittsburgh district his valuation is sustained by the further fact that this company now has transmission mains connecting it with

many other cities where it is possible to obtain higher rates for gas, and that to the extent of these other communities or markets being willing to pay a higher price for gas, the value being sustained thereon should be included in the rate [fol. 650] base and serve as a justification for increased charges against the cities and consumers in West Virginia. That is another form of the exchange theory. It merely amounts to this. If in Pennsylvania, Ohio, and Kentucky, where the natural gas resources are not so well fixed and extensive as they are in West Virginia, they are, because of the higher cost of fuel, willing to pay for this rich product a higher price as determined by their next available substitute measure, the saving between the price which they are willing to pay and which the community here has been paying may be capitalized against this public. That has operated in this form. When the cities in Ohio and adjoining states pay a higher rate, the gas companies ask the people of this community to pay higher rates or the gas will be piped out of the State of West Virginia. When the cities in West Virginia pay a higher rate the gas companies say to the cities in other states, "If the gas companies can sell their product at home there is no incentive for piping the gas a long distance and they must have higher rates at distant points." When these rates are granted, the statement is made to other cities, "Unless you pay as high a rate as these cities are paying we will sell our gas where [fol. 651] we can get the largest price." This practice has resulted in a vicious circle, and Mr. Davis is capitalizing the natural gas reserves on the theory that that vicious circle constitutes an economic justification and support for the value which he has found, and using that theory as measuring the saving in this field.

Leaving the criticism of his theory, and taking up the data which Mr. Davis compiled—on which he based his saving—his estimate of the saving and value of the property on the theory of delivering the output to Pittsburgh markets, it develops that the costs that he used do not properly reflect the cost of manufacturing producer gas. He proceeds on the theory that the costs which obtained as of December 31st, 1923, will remain in effect substantially unchanged for eighteen years in the future. Practically every item of expense and every step in building up this large

sum of thirty-two million dollars as the value of the gas field is based on his opinion or is merely an estimate; the entire structure is entirely hypothetical and highly speculative.

I will not repeat all the instances in which estimates were made and the likelihood that other men, equally well informed and equally interested in the subject, would agree [fol. 652] with Mr. Davis as to the costs in each instance. It appears in the record that Mr. Uebelacker differs very decidedly with Mr. Davis as to the value of gas in Pittsburgh. Whereas Mr. Davis has computed it in great detail at 35 cents, Mr. Uebelacker believes it can be sold very profitably at 30 cents per thousand cubic feet. The difference of 5 cents is so large that in order to find substantially the same value in this instance, because they do find approximately the same results, Mr. Davis applies the compound discount theory to bring his result, based on a 35 cent rate, down to his final conclusion; while Mr. Uebelacker, starting from a 30 cent value, does not use the compound discount theory. Therefore, starting from two different bases and using two entirely different methods, which in principle should be correct either one way or the other, they arrive at substantially the same conclusion.

Mr. Uebelacker has used a method which has more economic support for it, except that it also does not apply in the appraisal of a public utility natural resource. Mr. Uebelacker has taken a number of contracts and determined the amount which the United Fuel Gas Company could save if it supplied the same service to the purchasers under these [fol. 653] contracts at the rates set up in the contracts. He finds that this is a saving of 5 cents per thousand cubic feet, as measuring the value of the gas underground. One of the six contracts or bases is the possibility of selling the gas product in Pittsburgh at 30 cents per thousand cubic feet, as opposed to Mr. Davis's computed cost of 35 cents per thousand cubic feet.

That if you are determining the value of the reserve, the compound discount factor should be used in both instances. The situation is somewhat confused, and treated inconsistently, because Mr. Davis is appraising the property on the basis of its probable sales value, Mr. Uebelacker is selling the product over a period of eighteen years, but a

purchaser investing his capital in a sum which would be returned to him over a period of eighteen years would certainly discount the price which would be paid to him, because he would not receive a full measure of return on his capital unless he did discount it based on the rate at which the gas is actually going to be sold. Mr. Uebelacker's method would be correct provided all the gas could be produced and delivered within one year or within a certain limited time, but it is open to other defects, because it is purely the exchange theory; it is capitalizing the monopoly [fol. 654] power to earn. It is not reflecting the value under public regulation. If you can capitalize the monopoly power to earn, then regulation ceases to have any worth. If regulation has any value or effect, then it must apply to the very purpose which it was created to cover and to protect the public against such exploitations. Both engineers have proceeded on the theory that this commission does not exist as an administrative body, and that there is no law regulating the use of a natural gas resource when devoted to the public service. They are, however, appearing before this commission and ask for an increase in rates on the accepted theory that there is such a law.

Now, you can not capitalize on the theory of monopoly and ask for an increase in a legislative authority on a right to capitalize on a monopoly power.

I show on page 13 the enormous increase that has taken place in wages, as shown by the United States Bureau of Labor, and raise the question as to the likelihood that this high schedule of wages and labor costs per unit of production will remain unchanged for 18 years in the future. History records no such instances and gives no support for the theory of Mr. Davis.

[fol. 655] To better show the extent of the tremendous increase in wages, I have produced in graphic form the table which appears on page 13.

I also want to call attention to Mr. Davis basing his cost of gas in Pittsburgh on the market price of coal as of December 31, 1923. There is no justification for his view that the market price of coal as of that day will remain the fair price of coal for 18 years in the future. I have prepared a separate memorandum setting forth the conditions which now obtain in the coal industry, why it is so disturbed

and distressed, the conditions which are operating to take the industry through a deflation, and the steps that must be taken to remove the artificial forces which have been applied to stimulate coal production and protect such interests in that business, and how they have operated to destroy and hamper rather than to benefit the industry. No study of the coal situation, especially in this part of the United States, can be made without coming to the conclusion that while the industry will emerge before long when the artificial barriers are removed on a more prosperous basis, this readjustment will be accompanied by a decline in the price of coal to the consumer.

[fol. 656] The study referred to was filed as part of his testimony, marked Hagenah Exhibit No. 3 (and is attached hereto as part hereof).

Exhibit No. 3 is an analysis of the conditions which are now operating to bring about a lower price of coal to the consumer. It analyzes the changes which are now under way in the industry, bringing it through the period of deflation which followed the stimulation of the industry during the war. The coal industry is going through more or less the same cycle, at least as to the major influences, which were present in the agricultural situation and in such other industries as copper mining, canning, pork packing, and others that can be mentioned. There is also a discussion of the substitutes that the public has resorted to, to get away from an artificial price level that has been created in the coal business, and the steps that the electric industry is taking, which will result in a material reduction in the use of coal, both through the development of hydro-electric properties and the construction of large central stations, where the amount of coal per kilowatt hour will be reduced to approximately one and one-half pounds per unit of energy, whereas in many stations throughout the United [fol. 657] States the production today is at the rate of from three to five pounds per kilowatt hour.

These forces are operating to reduce the total demand for coal and will compel the closing down of the high cost mines which were put into operating under the stimulus of artificial conditions, leaving the coal market on a much smaller capital investment and capacity, to produce the nation's supplies from those parts of the nation which are best endowed with the richest coal deposits.

I don't want to be understood as having this testimony or memorandum interpreted as indicating unfavorable conditions for the coal industry in the future for any part of the United States; on the contrary, to avoid exactly that interpretation, I have several paragraphs showing how, when industries have emerged from the period of deflation following the use of artificial stimulus, a greater prosperity has resulted than was present before. I show in this exhibit how that is working out in these very coal fields in this state and in Kentucky. You have an editorial in one of your papers which I think touched on that subject in a very excellent way.

[fol. 658] Exhibit No. 3 is filed for the purpose of reflecting the uncertainties and the speculations that Mr. Davis has resorted to in figuring out the cost of producer gas over a period of eighteen years.

That he has made a study of the appraisal of the gas lands and leasehold property of the United Fuel Gas Company as furnished by Mr. Uebelacker, and has reduced the said study to writing, and files the same as part of his testimony, marked Hagenah Exhibit No. 4 (which is attached hereto as part hereof).

Mr. Uebelacker has appraised the proven and probable production acreage of the company as of December 31, 1923, at $33,155,000.00. His estimated value of unproven acreage is $3,293,000.00. The total value for the combined proven and unproven acreage, he says, is $36,449,000.00. The basis used by Mr. Uebelacker in arriving at this conclusion is set forth in one paragraph in his report, from which I read as follows:

"The measure of the value to the owner or lessee of gas in the ground is the difference between the prevailing market price at which said owner or lessee can purchase gas delivered to the field mains and the cost to such owner or [fol. 659] lessee of producing and maintaining, with his own wells, an equivalent supply of gas at the same point of delivery."

In analyzing this principle it is necessary that three factors be determined. First we must know the total cost to the owner or lessee of producing and maintaining, with his own wells and equipment, an equivalent supply of gas cor-

responding in delivery conditions to those under which the gas is purchased. This total cost must include operating expenses and depreciation, amortization of the value of the equipment used and a fair return upon the investment in such equipment.

Secondly, he must determine the prevailing market price at which gas can be purchased as controlled by delivery conditions; and, thirdly, he must determine the recoverable content or the amount of the gas.

It will be seen at once Mr. Uebelacker is using the exchange theory. I have already explained the extent to which he had used this theory. I have, in this exhibit No. 4, discussed his reasoning and the error into which he has fallen, both as to the principle used, and the application of his data. Without going into detail, let me say that Mr. Uebelacker has taken six contracts or selling situations, un- [fol. 660] der which he has determined the cost which the United Fuel Gas Company would incur if it were supplying the same service under such contracts and the savings or profits which it would make. Naturally, there are different margins of profit under each contract, and he concludes that a fair average is 5 cents per thousand cubic feet, and he multiplies the total recoverable content, as estimated by Mr. Davis, by this 5 cents and arrives at his value for the proven gas acreage.

There is a great deal of speculation in each of these contracts because of the steps involved in determining the measure of profit or computations and opinions dealing with matters which are not present facts in the experience and operation of this company. No consideration is given to the capacity of the companies or the quantity of gas delivered. Apparently, Mr. Uebelacker has given as much consideration to a profit of seven or eight cents per thousand cubic feet on sales that would not aggregate any more than one or two days' demand on this company's system as he has given to the profits of this company on an amount as large as reflected by the quantity of gas which this company actually purchased in the open market.

[fol. 661] Again, these contracts, by their very nature, show there is no competition between the companies; that each contract is based on the conditions peculiar to the business relationship between the gas company and the

purchaser; that no consideration is given to the life of the field of these companies and the likelihood that one company may or may not be selling at a lower margin of profit than another company, or that they may be able to get a larger profit because of the fact that these contracts, as a rule have not been made under regulation. To the extent that this commission has not been consulted and approved of the contracts under which he developed the margin of profit, Mr. Uebelacker is also capitalizing the monopoly power of the utility free from regulation.

That the fact that the independent companies considered by Mr. Uebelacker have not the opportunity or the power to purchase their supply of gas from the United Fuel Gas Company is a factor to be considered, and also shows the speculative basis and the general unreliability of such data in measuring the value of the huge gas reserves of this enormous company. Further, it does not appear from Mr. Uebelacker's exhibit that these individual contracts of the [fol. 662] different companies fairly reflect their operating conditions. Being without the supervision of this commission, they may have made individual contracts, of which these may be examples, in which they made more or less profit than they made for their business as a whole, and on the basis of what this commission would consider as a reasonable return. The contract is apparently made by the two parties dealing at arm's length, the purchaser agreeing to pay such a price as he thinks will give him a profit in the particular unregulated field of competition in which he must sell his products. The price is not affected by the principles of regulation and the decisions which govern.

There is, however, one more serious objection to the data which Mr. Uebelacker has compiled. Mr. Uebelacker finds that the value of the gas in the field is five cents per thousand cubic feet. If we assume that the five cents measures the value of the product in the field, the company then stands in the position of buying its entire gas supply at five cents, purchasing the product at five cents per thousand cubic feet. The seller of that gas must take his return on the investment and any depletion charge, or other retirement charge, that he may wish to consider, out of the five [fol. 663] cents. There can be no further charge included in the operating expenses of the company after the

product is acquired at what Mr. Uebelacker says is the fair market price.

To illustrate, assume that the company was buying coal instead of gas. Could the seller of the coal, after he had received the market price for the coal, add thereto an allowance for return on his investment in his coal mine and for the depletion of his investment? If he added that to the cost that he had received in a fair market for his coal, would he be able to sell it? Would he not, by that very act, reach a price in excess of the market price? He who sells a product from his resources must reap his profit out of the price which he accepts.

Now, if the market value of gas is five cents, as found by Mr. Uebelacker, and we accept that for the purpose of illustration, the company then stands in the position of buying its entire output at five cents per thousand cubic feet, and there can be nothing added for rate of return or depletion pertaining to the investment out of which that product has issued.

That the company should treat the gas delivered each year on the same basis that it does the gas that it actually purchases in the field; that that is the inevitable conclusion [fol. 664] to be drawn from Mr. Uebelacker's testimony. He finds the gas is worth five cents in the open market. If that is true, and the company stands in the position of buying it at the open market price, how can the public, after paying the open market price, be asked to pay certain fixed charges as to the source of production from which that gas product was obtained. He reaches that five cent value after he deducts the cost of lifting the gas to the top of the ground, the drilling of the well, of the equipment, the abandonment of the well, and everything, and after deducting all those items he comes to the conclusion that the gas in the ground net has a value of five cents per thousand cubic feet; this must be the inevitable conclusion to be drawn from his testimony, because when we apply the principle which Mr. Uebelacker has accepted to other commodities we know that the result stated follows.

We have recently had a splendid illustration of that applied to a natural resource. I refer to the situation which was obtained in the copper mining industry for the

last three years. We have a number of very important copper producing corporations; one of the largest being the Anaconda Copper Mining Company. It is a high-cost [fol. 665] producer. Other large companies, and very favorably situated and low-cost producers are the Kennicott and the Chile Copper Company. The Anaconda Copper Company has enormous copper resources, but its cost of mining was eleven cents per pound during one of the recent years, being years of depression. The market price for copper during that time was thirteen cents. Chile Copper Company and the Kennicott Copper Company had mining costs of six cents per pound, while the market was thirteen cents per pound.

Applying Mr. Uebelacker's theory, the value of the Anaconda Copper Company's copper reserves was the difference between eleven cents and thirteen cents, or two cents per pound. The value of the reserves of the Chile Copper Company and other companies favorably situated was the difference between their costs and the market, which, by way of illustration, you may say is seven cents a pound. Here we have a competitive condition. In a thirteen-cent market which company is most favored? Naturally the low-cost company. They had large values for their reserves. They stand in the position of the United Fuel Gas Company; but when the Chile Copper Company sells its copper at thirteen cents, which consists of seven cents for [fol. 666] the value of the copper in the ground plus six cents, the cost of brigning it out, and then takes their advantage of the thirteen cent price in the market, can it go to the purchaser of copper and ask him to pay, in addition, a return on the investment of the Chile Copper Company in its mines? Can it further ask the buyer of copper to pay it a sum to cover depletion of its stock? The Chile Copper Company, any copper company, must take its rate of return or profit and its depletion charges out of the market price, because the market price means the price at which competitive conditions force the sale of the product; and anything added to the accepted market price immediately destroys the assumption, namely the market price.

In this instance, therefore, the operation of the copper company where there is competition—and this shows the

impropriety of Mr. Uebelacker's theory—because there is no competition in the natural gas business—the Chile Company and the Kennicott Company operated at a much larger percentage of capacity when copper was thirteen cents a pound than did the Anaconda Company. The Anaconda Company had to pass its dividend in spite of its enormous copper reserves because it had no margin of [fol. 667] profit over the cost of operation. Now that the price has gone to fifteen cents, Anaconda Copper restores its dividend. Kennicott Company is promising its stockholders to increase its dividend, based upon the competitive conditions and the natural advantages which result from the greater value of the reserves, and these, in turn, based on the lower cost of producing.

The United Fuel Gas Company, Mr. Uebelacker says, has a value of five cents per thousand cubic feet in the ground because there is a market. That corresponds to the thirteen cent price of copper. When it takes this gas at five cents per thousand cubic feet, it has paid everything that directly or indirectly enters into the operating cost or the fixed charges of the reserve, exclusive of the cost of lifting the gas out of the ground, because that has been taken care of through other operating charges.

That upon the assumption that the gas lands and the leaseholds of the United Fuel Gas Company are substantially of the value testified to by Mr. Uebelacker and Mr. Davis, he has made a study of the proportion that is presently used and useful in the service of the United Fuel Gas Company, and he files the same as part of his evidence [fol. 668] marked Hagenah Exhibit No. 5 (which is hereto attached as part hereof).

I have attempted to show in the analysis of the testimony in exhibits by Mr. Davis and Mr. Uebelacker that their valuation results were obtained through the use of improper valuation methods, and were based on hypothetical conditions and speculative data. Assuming, for the sake of further analysis of the subject that their conclusions are substantially right, but not admitting the accuracy of either their methods or results, assuming that the value for the gas reserves is approximately $33,000,000.00, it is my belief that not all of such value is presently used and and useful. The whole development of public utility regulation has recognized that the return should

apply only on a rate base which will include no more porperty than is presently used and useful in the public service. I believe that an 18 year reserve, even though it be worth $33,000,000.00, and even though it is desirable to have the company own such reserves, is not property used and useful in its entirety.

I believe that it is the settled rule that only such a part of a company's resources as is used and useful should be included in the rate base. I come to this conclusion from [fol. 669] a study of some court and commission decisions. I state, on page two of Exhibit No. 5, the recent expression of the Pennsylvania Supreme Court in finding that the value of the gas reserves is to be considered in the appraisal of the property but it says that not all of such value is to be regarded as used and useful.

How much of the company's gas reserves is used and useful at any one time is of course open to difference of opinion and argument. I have assumed that in this instance a five year's supply covering future requirements, is a reasonable amount to include in the rate base. If the gas reserves are to be appraised on a basis of the exchange theory, then only that part of the $33,000,000.00 reflected by five-eighteenths based on an 18 year life is presently used and useful and the returns would apply on such sum.

To illustrate the application of the used and useful principle as applied to natural gas reserves, I have prepared a blue print which is incorporated in exhibit No. 5 and shows the natural gas reserves in the form of a rectangle. A. C. F. D. bound the points of this rectangle and they represent the appraised present value of the gas reserves at $33,000,000.00, and cover an 18 years' supply. The marked or [fol. 670] shaded portion embraced in the vertical rectangle A. B. E. D. represents the present value of the gas reserves, assuming a five years' supply to be a reasonable amount to include in the rate base on the exchange theory of value. The horizontal rectangle, G. I. F. D represents the book cost of the gas reserves covering an 18 years' supply, stated by Mr. Jirgal to appear on the books as $6,700,000.00. The area marked by B. C. F. and E. represents that part of the 18 year reserve which is presently used and useful.

At this point, an important question of policy and possibly of law enters and I shall call attention to it so that the two possible conclusions may be presented for the con-

sideration of the commission. In the first instance, this company had acquired the natural gas reserves as a part of its business. The acquisition reflects the skill and judgment of its executives, who have been hired because of their skill and judgment, and as such are compensated by the company, and such compensation included in the cost of gas. Now the question arises, the cost of acquiring this property so long in advance of immediate needs and of carrying the same having been borne by the public, can the officials, representing the stockholders, bring this [fol. 671] property into use for the public on a basis which results in a large profit to them, after the public put in its way the facilities for its acquisition? If the principle of agent or trustee applies here to any extent, can the officials of this company, as officials of a public utility, with all that that term means, acquire an 18 year gas supply at a cost shown by the books to be $6,700,000.00, to meet an 18 year supply, and then, having obtained it for the public use, bring it into the rate at a value of $33,000,000.00 by the use of an exchange theory that in the first instance does not apply?

If the public has been charged with the cost of acquiring and carrying these properties, does not the profit which results from economic law and the growth of heavy population and use generally resulting during this condition inure to the benefit of those who carried the cost of acquiring and obtaining it? If the property is to be included in the rate base at is value, as here determined, that value can apply only to so much of the property as is used and useful. If the entire property acquired by the company is to go into the rate base, it cannot go in at any price or value higher than that at which the public has been charged for its [fol. 672] acquisition and carrying it.

Two possible elements of analysis and two conclusions result from the study of this diagram, and they appear on page 7. I read from them as follows:

"First. Assuming that a five year gas supply is a reasonable measure of the reserve presently used and useful, and also assuming, for this purpose, the accuracy of the appraisals made by the company's engineers, there should be included in the cost of service a return on only five-eighteenths of the value of the gas reserves, the remaining

property of this class being carried as an investment by the company at its own expense until such time when it is used and useful, when it will be included in the rate base at its then present value."

In other words, if it is acquired for the purpose of speculation against the public and the value of the reserves is the basis at which it is to go into the rate base, then such value can apply only to the part which is directly dedicated to the public use and made used and useful. It cannot apply to the property which is not used and useful, because the public is paying the carrying charges on it, and cannot also pay for the economic increment at the same time.

[fol. 673] That if the United Fuel Company, in order to protect itself, acquired a large amount of such gas leaseholds or properties at a time when it did not need them and probably did not desire them, that would make it all the more important that this theory be not accepted, because if the company has taken advantage of a condition to increase the cost against the public, the public should get the benefit of their foresight and wisdom; the company could not take advantage of this condition, which it clearly foresees, in the spirit of protecting the public against these conditions, and then capitalize it against the public. Where does the public gain in the slightest degree by the company going out and buying this gas land in the future if it must always pay for it on the basis of its gained value as determined by competitive conditions by the exchange method? The public would gain by the fact that it had the gas, but it would pay a price for it purely determined by the monopoly power. It would be no better off than if the officials never bought the gas in advance but went out in the field and bought it under conditions under which they are seeking to capitalize it against the public, when and if they bring it into the used and useful property. If they exercise the [fol. 674] foresight now and acquire it, the public should have the benefit of it because it is asked to pay for it. If it is not asked to pay for it, then it must pay a return on the value when those who have exercised that foresight at their own hazard bring it into the rate base.

Now, the second alternative is as follows. Adopting the same assumptions as are set forth under A above, there

should be included in the cost of service a reasonable return on five-eighteenths of the value of the gas reserves and a return at the same rate on thirteen-eighteenths of the book costs of such reserves.

Now that means this: That if the officials, exercising that foresight to which reference was made, acquired an 18 year supply, and the gas reserves are to be appraised on the exchange theory of value, then that part used and useful should be included on the market value basis, but surely the public should pay no more than a return on the actual cost of acquiring the gas lands held for future use.

That the question of competition among those desiring to acquire gas territory is an important factor to be considered, and it is considered in the method used by him. [fol. 675] The appraisals by Mr. Davis and Mr. Uebelacker recognize conditions as they were in 1923, and recognize a certain amount of competition which prevailed at that time. I am taking five-eighteenths of that value as reflecting the amount now used and useful. It is necessary to do that; if the question of value as determined on behalf of the company is accepted as the basis on which the five-eighteenths is to apply, under the theory used by the company, the natural gas reserves will each year increase in value, under all normal conditions, and the cost to the public would therefore increase; the valuation might reasonably be on their theory of $33,000,000.00 today and four or five years from now, if the anticipated competition develops, the valuation might rise to $80,000,000.00 or $90,000,000.00, in which event the public would again be asked to pay a return on the higher value. The higher the unit cost on which they base their testimony, and the greater the competition, the greater the value, so the only protection which the public has, if the exchange theory is to be considered at all, is to include in the rate base the value of that part used and useful to the public.

On the exchange theory, the increased competition would enhance the value of the company's gas, with consequent [fol. 676] ever increasing costs to the public; if the public has been paying the carrying charges which the company has incurred to protect itself against this competition, then the public should be protected against the high costs which result from competition, the carrying charges being its insurance against such excessive costs.

That he has studied the exhibit submitted by Mr. Uebelacker, and in providing for depreciation and amortization he believes Mr. Uebelacker has developed his depreciation and other annual charges on an incorrect basis. The percentages which he has computed are applied by him on his estimated value of the property, but in the judgment of the witness those percentages should apply on the actual cost of the property. That the purpose of setting aside a depreciation reserve and the purpose of an amortization reserve is to maintain intact the integrity of the investment; the owner is to be protected in the actual property that he has sacrificed or devoted to a particular use; he is not to be protected in any speculative venture outside of that particular sum; if there is depreciation in the property he is compensated by having his return figured on the value of the property; the public can be charged only with the amount necessary to maintain the integrity of the invest-
[fol. 677] ment; a reserve charge of this kind cannot very well be applied on an uncertain or fluctuating principle; if the property appreciates in value both the return and the appreciation would be bringing the investor a measure of profit; he is entitled to the profit resulting from the increased value, but he cannot also have that appreciation retired through the depreciation reserve; if the property depreciated, through adverse conditions, he would still be entitled to the principal amount which he has made a sacrifice of, even though that were lower than the actual cost; that would be necessary because of the competition which would be incurred through new capital; so it is the dollars invested that are protected through depreciation and amortization; that the values that he fixes on the leases go into the rate base for the purpose of return, whereas for the purpose of depreciation and amortization it is only the money cost which should be collected from the consumer and handed back to the company; whereas, if the method adopted by Mr. Uebelacker is followed, you would not only get the return on the increased value as estimated by him, but in addition to that make a profit over and above the actual cost in value of a depletion charge.

[fol. 678] That he has prepared a statement showing the distribution of the net earnings of the United Fuel Gas Company available for depletion, depreciation and the re-

turn on the reproduction cost less accrued depreciation, when the gas is valued at 5 cents per thousand cubic feet in the ground, and files the same as part of his testimony marked Hagenah Exhibit No. 6 (which is attached hereto as part hereof).

Exhibit No. 6 is designed to show the per cent which the company is earning on its reproduction cost new, less accrued depreciation, if the value of the gas in the ground is said to be five cents per thousand cubic feet, and the company is assumed to buy its entire production, that it is now producing from its field at such five cents.

The first part of the table is devoted to the determination of the investment or fair value of the property. These data are taken from Exhibit No. 1, the adjusted appraisal exhibit which I offered this morning. I have excluded from the total the book cost of the gas leases. There is included in the rate base, then, only that property which the company owns, beginning with its facilities for raising the gas and distributing it. The gross earnings are shown as per [fol. 679] the company's books, testified to by Mr. Jirgal; the operating expenses have also been taken from Mr. Jirgal's exhibits. Since, however, this table contemplates the purchase of the gas now produced, on the theory that the company is buying this from an owner who is getting all the costs incident to carrying an investment in productive fields, I have excluded from the operating expenses those carrying charges incident to carrying the present gas reserves; that is, the leasehold expense, rentals on unoperated acreage and royalty expenses. There is included among the operating expenses a charge of 5 cents per thousand cubic feet for the gas purchased in lieu of the items taken out of the operating expense, and also that part of the property that is not included in the rate base on this theory. These accounts have, then, been distributed over the major operating divisions of the company, showing the amount apportionable to the city of Charleston, the city of Huntington, the city of Williamson, and other sections of West Virginia, and then the total is shown for West Virginia. I further show the total for Kentucky and Ohio and for the wholesale service; the last column shows the total for the company as a whole; the value of the property, exclusive of the lease- [fol. 680] hold investment, but including an allowance for

working capital and going concern value, for $27,959,-180.00; the total gross earnings are $9,225,673.00. Among the operating expenses appear the items as per the company's books, exclusive of those charges pertaining to the leasehold investment, as carrying cost, and also the charge of five cents per thousand cubic feet for that amount of gas which the company is now producing, but which it is supposed would be purchased at the fair market price as determined by Mr. Uebelacker. That payment would be $1,-868,524.00.

There has further been an adjustment of 50 per cent of the gasoline net revenues, making the net operating expenses $3,496,147.00. The gross income is on this basis $5,729,526.00. Deducting the income tax, the net earnings available for depletion, depreciation and return are $5,417,-180.00. This amount on the company as a whole indicates a return of 19.38 per cent; for the city of Charleston, the return on this basis is 19.18 per cent; for Huntington it is 10.79 per cent; for Williamson it is 12.70 per cent; for the remainder of West Virginia it is 17.16 per cent, and the total for this state is 15.81 per cent. The ratio for Kentucky and Ohio is 23.34 per cent, and on the wholesale serv-[fol. 681] ice it is 20.14 per cent.

That in making this table he excluded the cost of the gas leaseholds, for the reason that if the company is buying its gas at the fair market value it could not also have included in the rate base the facilities or source of production on its own account; the income or return and the depletion charges which would be applicable to the investment in leases must come out of the five cents per thousand cubic feet, which is the market price for gas, and not to deduct it from the rate base would therefore result in a duplication; and for the same reason he has eliminated the carrying charges for the leases; this cost must come out of the five cents per thousand cubic feet collected by the owner of the gas. If at this price the company can make more than eight or nine per cent, that is their good fortune; if it cannot make a return of 8 per cent upon the particular leases devoted to this service, that is its loss, and not the fault of the public; that in making this statement he has taken the figures of valuation shown in his exhibit No. 1; that if he substituted for these the valuation figures given by Mr. Uebelacker the

difference would involve a lengthy computation, but would be indicated by this adjustment: that is, Mr. Uebelacker [fol. 682] shows the reproduction cost less depreciation, including the gas reserves, to be $66,070,000.00; his present value of the gas land leases and natural gas rights is $36,000,000.00, leaving the present value of the property exclusive of those rights approximately $30,000,000.00, to which should be added $3,000,000.00 for going concern value, which makes a total of thirty-three million, which compares with his total of almost twenty-eight million; that is, Mr. Uebelacker's basis would be five million more than his; and that difference is explained by the fact that he used a lower amount for overhead charges than Mr. Uebelacker did, and that his theory of amortization, in some instances, as determined on the straight line basis, is somewhat lower than Mr. Uebelacker's, otherwise they are in agreement; that if he accepted 8 cents per thousand cubic feet as the value of the gas in the field, after being produced, and the lifting cost being approximately 5 cents per thousand cubic feet, the value of the gas underground on that basis would be about 3 cents per thousand cubic feet, and this would make the return larger.

That he has made up a statement showing the amount and per cent of return earned on the cost of reproduction new [fol. 683] less depreciation when gas is valued at 5 cents per thousand cubic feet in the ground, and files the same as part of his evidence marked Hagenah Exhibit No. 7 (which is attached hereto as part hereof).

Exhibit No. 7 is based on Exhibit No. 6, but carries the analysis one step farther. It will be noted that the first column, showing the cost of reproduction new, is taken directly from the total investment figures appearing in the total under the first group near the top of the page on No. 6 exhibit; the second column figures are taken from the black figures at the bottom of Exhibit No. 6. There is next computed depreciation at the rate of 5.5 per cent on the book cost of the property. This aggregates $1,097,007.00; the net earnings available for return will then be $4,320,173.00, equivalent to an income of 15.45 per cent on the appraised value of the property. This income ranges from 6.84 per cent for Huntington to 19.40 for Kentucky and Ohio; the average for the state of West Virginia is 11.88

per cent. The allowance for depreciation shown in red figures in the third or middle column is taken from the testimony of Mr. Jirgal.

[fol. 684] That he has made a study with reference to the crude petroleum and gasoline production, consumption and stocks for the last few years, and files the same as part of his evidence, marked Hagenah Exhibit No. 8 (which is attached hereto as part hereof).

Exhibit No. 8 sets forth the statistics contained in recent official publications regarding the amount of crude petroleum consumption, the gasoline production, the domestic gasoline consumption, the gasoline stocks at the end of each month, and the number of days' stocks of crude oil on hand. There are two columns under six of the headings; the first shows the statistics in absolute terms, while the second column shows the index numbers; for the data in question, the information is given in terms of monthly averages for each of the years from 1913 to 1923, inclusive, and then the actual monthly figures are given for each month in 1923 and 1924. The purpose of this exhibit is to show, first, that there was a very unfortunate and unusual condition in the oil industry in 1923 and a part of 1924, but that the industry is now working rapidly into a more improved condition; the crude petroleum production is now falling off from the heavy outpouring during 1922 and 1923, when the California fields were breaking all records. This is shown [fol. 685] in terms of millions of barrels and also in the index number; while the crude petroleum is now falling off, as compared with a year ago, consumption is increasing. In other words, both forces are now working to the advantage of the oil industry; the gasoline production, the domestic gasoline consumption is breaking all records; the consumption is running from 15 to 20 per cent in excess of last year, and now being much heavier in the winter months than it used to be, because of the large increase in the number of closed cars and trucks which operate throughout the winter months, which condition was much less prevalent two years ago. The amount of gasoline stocks is also being reduced, and that is further reflected in the amount of oil on hand.

That the price of gasoline has increased within the last thirty days; that he does not know how many increases

have been made; that they have been extensive and covered large sections of the United States.

That he has prepared a statement showing the apportionment of investment and expenses between the gas and gasoline departments, and the per cent available for depletion, depreciation and return in the case of the gas department for the year ended December 31, 1923, and files the same as part of his evidence marked Hagenah Exhibit No. 9 (which [fol. 686] is attached hereto as part hereof).

Exhibit No. 9 is designed to show the investment of the United Fuel Gas Company that is used for the joint benefit of the natural gas and gasoline departments, and also the operating expenses that are incurred for the joint service. I have made an analysis of the appraisal report made by Mr. Uebelacker, and have deducted therefrom that property that is devoted in part to the benefit of the gasoline service; the production system is 100 per cent, or $14,122,814.00, devoted to this service; of the transmission system, which embraces four hundred and fifty miles of lines, 55 per cent is not charged in any way with the gasoline service.

The general property has been divided between the gasoline and the gas service, in proportion to the directly assignable property and that apportioned as above; I have then added to this the 18 per cent for overhead charges, making a total joint gas and gasoline property of $21,063,928.00. The ratio of the gross earnings between the gas and gasoline service is as follows:

75.38 per cent of the gross revenues comes from gas, and 24.62 per cent from gasoline; there is then deducted from this joint property 24.62 per cent, or $5,185,939.00, leaving [fol. 687] as property assignable entirely to the gas service $15,877,989.00. To check the appraisal, there is then added back the balance of the transmission system, namely, 55 per cent, the local distribution systems, the remainder of the general property and the overhead charges applicable thereto. This, when increased by the working capital and going concern value allowance, brings the total gas department investment to $29,506,161.00 as against $5,185,939.00 devoted to the gasoline business; the total is $34,692,100.00 or the appraisal result.

The next step was to make an apportionment of the operating expenses, and the same general principle was followed.

The production expense and the gas purchased cost have been charged entirely to the gas department; 45 per cent of the transmission expense has been charged to this department, because 45 per cent of the investment was charged to it. The general expense was distributed on the basis of the assigned operating expense to the two services, making the total joint gas and gasoline expenses $2,176,958.00; the gasoline proportion of the joint expense, distributed on the basis of the gross income, is $535,967.00. The joint property investment belonging to the gasoline department is $71,595.00, making the total operating [fol. 688] expense assignable to the gasoline department $607,562.00. In other words, if there were no separation made between the gasoline and gas department or no credit given to the gas department for gasoline revenues, it would be necessary to make an adjustment in the operating expense, which, as the accounts are now kept, includes approximately $607,000.00. This amount is now incurred on account of the gasoline department and should not be charged against the gas service. The present value of the property assigned to the gas department, as shown in the first division of this exhibit, is $29,596,161.00; the net earnings of the company, before depletion and depreciation, as shown by Exhibit No. 1 of Mr. Jirgal, are $6,504,270.00. If we deduct from these net earnings 50 per cent of the gasoline net earnings, there is a total of $5,569,876.00, which represents the net earnings before considering the gasoline business. Adding back the gasoline proportion of the joint expense, as determined above, namely, $607,562.00, there is shown a net earning, after adjustment for gasoline, of $6,177,438.00; this amount being available for depreciation, depletion and return. This is then equivalent to a return of 20.94 per cent.

That he has prepared a statement showing the per cent [fol. 689] earned on the various valuations made by him and others, and files the same as part of his evidence, marked Hagenah Exhibit No. 10 (which is attached hereto as part hereof).

Exhibit No. 10 is by way of summarizing the effect of my testimony and that by Mr. Jirgal. I show the effect of these various adjustments, as reflected in the per cent return on the valuation. Five different comparative studies

are made. The first column shows the return, based on the present value of the property as determined in my Exhibit No. 1, including the gas reserves at their book cost; the net earnings before depreciation and depletion are taken from Mr. Jirgal's exhibit in each case; the provision for depreciation and depletion is likewise taken from his exhibits, and the deduction of the provision for depletion and depreciation shows the net earnings available after depletion and depreciation, the return earned by the company on the basis of the present value of its property, with the gas reserves included at the book cost is 14.72 per cent. If instead of carrying the gas reserves into the rate base at the book cost, we assume that the value of the gas reserves is approximately $33,000,000.00, and that only the part presently used and useful should be used in a rate base or [fol. 690] five-eighteenths of such appraised value for the reserve, the return is 13.75 per cent. The rate base in this instance is somewhat greater, because five-eighteenths of $33,000,000.00 is more than the book cost of the gas reserves.

The third column shows the return computed on the book cost of the entire property; that is, without any adjustment to reflect the increase in cost, due to advancing labor and material prices. On this basis the return is 16.86 per cent.

The fourth column shows return to the company on the basis of Mr. Uebelacker's testimony, that the gas in the ground is worth 5 cents per thousand cubic feet; eliminating from the rate base the investment in the gas reserves and eliminating from the operating expenses the charges incident to carrying such reserves, and adding back in the place of those two items five cents per thousand cubic feet for the gas produced by the company, the return is 15.45 per cent. Making adjustment for the gasoline department, and treating the gas business as a utility by itself, taking from both the joint and the operating expenses, the items chargeable to this business, or, in other words, making adjustment for the part of the profits from the gasoline business to [fol. 691] cover the services performed for that business, and the property devoted to that business, the net return is 20.94 per cent. This latter percentage, however, is before making any provision for depletion and depreciation. To make the latter adjustment was rather an involved proposition and I did not have the time to carry the study farther.

Some subtraction would have to be made for depletion and depreciation, but I can not say by what percentage it would vary from the other figures on that same line.

That he has examined Mr. Jirgal's Exhibits filed with his evidence in this case, and is familiar with the method used by the company for making provision for depreciation; that this provision for depreciation is made at the rate of five and one-half per cent on the gas property and a somewhat lower percentage on another branch of its business; that this has resulted in an amount in excess of ten million dollars shown on the books of the company to the credit of the depreciation account. The amount which the company has set up for depreciation, as shown in its balance sheet, has resulted in a large credit balance in a property having a limited life, such as the natural gas company is here, the life being limited by the life of the gas reserves, [fol. 692] this depreciation has been charged against the public on a basis which contemplates its retirement, and, under the principle, should be treated as a return of this amount of the investor's money, unless actual replacements are being made, and to the extent that replacements are being made the property is being kept intact and the public should be charged with a full return on the investment. Where, however, no replacement of the property can be made because it will outlive or at least live as long as the life of the field, the capital is being returned to the company and may be used elsewhere,—it may be used in other gas properties or in an entirely different field; the deduction of the amount of capital which has been paid back on that part of the property that need not be replaced, should be reflected in the rate base figure to assist the company for using the money collected through depreciation for replacement purposes, but which has not drawn on that reserve because the replacements are not necessarily in use, and the public should receive the benefit of the interest earned by that sum of money; the interest thus earned by the depreciation reserve balance should operate to reduce the [fol. 693] charge against the public for depletion and depreciation.

That where the depreciation is set up with a view to replacing the property and it has to be replaced, the depreciation reserve should not be deducted from the rate base to

find the present value, because this property is being held in substance as a trust for the public, and therefore is part of the rate base; where, however, the property is not to be replaced, then the charge is equivalent to an amortization of the property, and to the extent that it is being amortized the rate base should be adjusted. Mr. Jirgal's exhibit shows the reserves set aside for actual replacements—that is, the depreciation reserve—have been drawn on for some replacements, but most of the charges against that reserve have been on account of abandoned acreage and wells, and not for partial retirement of property still in service, like the distribution service and transmission mains. The reserve must be considered in two divisions, just as the property is in two divisions, that part of the property being replaced during the life of the reserve and property subject to depreciation, and to the extent that the money is accumulated for that purpose; as to the second part of the property, which will never be replaced, the amount the company is charging against the public for the retirement of that [fol. 694] property is an amortization of capital, and unless an adjustment is made in the rate base on account of the amortization the public is charged with giving back a part of the capital and nevertheless charged in addition with the full return on it.

The reserve pertaining to the property, which must be replaced during the life of the field, and that property which will not be replaced but which is gradually being retired, as to the latter there is no interest provision, because the capital is in effect given back to the company. I merely say where it is given back, the public should not also be charged with a return on the money paid back. Now, as to the first proposition, just as we find that reserve in all continuing public utilities, and it is there for the purpose of making replacements—you can not make replacements every year on every class of property; some has a long life and some has a short life. Assuming that the provision has been made, with the greatest care and accuracy, and will always be and must always be in the strictly depreciation reserve a credit balance, as to that credit balance which [fol. 695] the company is setting up in its business or for money invested in a change or any other place, the interest

it earns should be credited to the depreciation reserve, and to that extent reduce the charge to the public.

That the company has a large reserve—one particular reserve; it has been making very few replacements, but using it for retiring abandoned acreage and wells, so few replacements have so far been necessary; minor replacements have been charged into operating expenses, but any very extensive replacements that have been made have been out of the depreciation reserve; their replacements have been largely, however, through operating expenses.

That he has studied the method used by Mr. Uebelacker in making an apportionment of the investment expense to the domestic and industrial consumers, and does not think it is the best basis. The natural gas business is not of the kind where demand is the determining factor; the demand theory applies particularly in the electric light industry, where the production of the company is not to be stored for any length of time; it applies also to the somewhat lesser effect in a telephone plant. The demand theory has [fol. 696] had very little recognition in the artificial gas business, where companies are able to build a storage holder which can cover the company's requirements anywhere from 18 to 24 hours, with the result that the plant can operate on a fairly uniform basis. In the natural gas business the company has an enormous reservoir, covering eighteen years' supply, and if the demand factor is of little weight in an artificial plant, it is of less weight in a natural gas plant. Mr. Uebelacker has estimated this by determining the daily consumption of the domestic and industrial classes. He has overlooked the fact in his method that in the industrial consumption it is not nearly so continuous throughout the month as is the domestic consumption; the industrial demand falls off for holidays and Sundays every month, and that sometimes there are more holidays, generally in the winter months, and that part of the maximum demand we have come on the holidays, beside the Sundays in every month, and then the industrial demand is heavy—it might not be so heavy Saturday afternoons in some plants—and if you take the monthly consumption and divide it by thirty you are penalizing the domestic consumer for the benefit of the industrial consumer, because he is receiving a smaller [fol. 697] percentage of the total.

The natural gas business is one in which the factors are not related to demand, but are rather a constant and what is known in accounting as a use factor as opposed to a demand factor. That he thinks the use basis or sales basis in a natural gas plant should be used in proportioning the investment and expense as between domestic and industrial consumers, because the characteristic features of the natural gas service are not related to demand.

Cross-examination:

That he does not think Mr. Uebelacker's basis of apportionment between domestic service and industrial service is the best method; that it is the wrong method as compared with a better one, and the better one is to base it upon the amount used by each service; that is, the quantity used by each service should be the determining factor; that there might be some modification of that—in fact, there should be some modification of that, although he would not say that either method was 100 per cent right regardless of the other; that he considered the use basis the best if consideration is only going to be given to one factor, but he has not attempted to make the segregation; that he would give [fol. 698] greater weight to the use factor; that in this case he would give it all to the use factor, although, if he was making a study over the period, as Mr. Uebelacker has, he might give some weight to the demand factor, so that his final answer would be somewhere between the two, because there is not a 100 per cent accuracy as between the two bases; that from his investigation the use factor would be the proper factor, and that he makes this statement after his investigation of six months, and that the rate per unit of natural gas should be the same for both domestic and industrial purposes to the extent that the cost could be determined by the use, but that the rate would depend on some factors that vary with distance and factors other than use; that some of these factors are interest, depreciation and operating expenses; some of these have been distributed on a distance basis; some are distributed as an overhead factor and some on use; that in making the rate he would base it upon the use factor; that there should be a difference in the two rates, of course, if you have a right to interrupt the industrial service, but he can't say how much that dif-

ference should be; that he has made no study of the operating costs and expenses; that this subject was not assigned [fol. 699] to him for study, and he was simply asked a hypothetical question and he was testifying on that basis that the use factor is more reliable than the demand factor; that he agrees with Mr. Jirgal on that point; that subject to the benefit that the industrial users have if the service can be interrupted on days of insufficient supply or other factors, the rate should be the same for domestic and industrial purposes; that he does not know what this difference would amount to, and has not studied it; that he knows that the basis adopted by Mr. Uebelacker is not correct; that he knows that by applying the basis he suggests he would not reach the conclusion that Mr. Uebelacker has reached; further than that he cannot say, because he did not make the study in the way Mr. Uebelacker did; that Mr. Jirgal covered that subject; that he was only asked one question from that standpoint, and he thinks the use factor is more reliable than the demand factor; that as between the two that is the best one to use; that Mr. Uebelacker did give some consideration to the use factor; that his report is perfectly clear but at the same time the way he determined the demand is, he thinks, wrong.

That he considers all of the eighteen years' supply of [fol. 700] gas which the company has is immediately available; that it is true that it would require the drilling of something like a thousand wells to make this supply available, but all of the gas could not be sold in one year; that it does not make any difference whether there is one year or five years available, there is ample gas to meet the demands in storage; that there are certain operating expenses in connection with the use of the holder; that the fact that additional wells would have to be drilled to get the additional gas out has nothing to do with the present demand; that he simply called attention to the fact that from a cost accounting standpoint there is a reservoir which is good for eighteen years for the purposes of this rate case; in determining the demand factor it would not make any difference whether the reserve is good for one or eighteen years; that he appreciates that you can't bring it in without having gas wells; the fact is that in operating property demand is not the determining factor; the costs are related

to use and consumption rather than maximum demand; that there should be no such thing as interruption of any of the service only to the extent that you have those ex- [fol. 701] traordinary conditions to be accounted for, and they are not brought about by demand; they are brought about by extraordinary conditions, weather conditions, temperature conditions; that cold weather in the winter time is an extraordinary condition; that hot weather in the summer time is an extraordinary condition as affecting the costs; these conditions are normal as continuing year after year, and the plant is built with the idea of taking care of the normal ranges and fluctuations in temperature up and down; they are not extraordinary; it is only a certain day when the demand may be so great from certain classes of service; that is true in every class of public utility; you can't throw on a power load in an electric plant without having some arrangement as to notice; that there are provisions which the plant is designed for in operation, but because they may come any day certain classes of consumers must suffer interruption of their service, and as between the domestic and industrial the industrial should suffer; that is not a factor that is considered as demand in cost analysis; it is a normal demand; the amount consumed in use by the customer should determine the cost of the service; the fact that certain service may be cut off should be given some consideration; it is not one of the [fol. 702] factors that goes to the maximum demand theory in distributing costs; you have conditions that are inherent and more or less abnormal in every class of business; that does not justify the maximum demand theory in making rates.

Here is a simple illustration for my point. Now Mr. Uebelacker takes the sales on the industrial and domestic consumers on a monthly basis and divides them by thirty, the number of days. Now that does not give the proper basis, because both classes of customers subject to that adjustment are not operating under the same conditions. The industrial consumers are not using the product for thirty continuous days; the domestic consumers are. Consequently, if such a division is to be made, the basis of a demand, you are giving the industrial consumers the benefit, because they are using the service four days a month less

than the domestic consumers; consequently your percentage of burden thrown on the domestic consumer is unduly high. If you interrupt them one or two or three days for any reasons extraordinary, the burden thrown on the domestic consumers would be correspondingly greater.

[fol. 703] That the interruptions in the service would come because of extraordinary conditions, but the coming of Sunday is not an extraordinary condition, that is an ordinary condition, and is a condition which he thinks Mr. Uebelacker should have considered, and which apparently he did not; that in his judgment as between the $33,000,000.00 valuation on the exchange theory and the amount appearing on the books of the company as the value of the gas reserves, he considers the book cost more nearly reflects the proper rate base, especially since the company can go out into the field and reproduce or replace those leases on a cost less than the amount shown on the books; that Mr. Jirgal's statement shows that it is replacing leases; that large numbers have been renewed at maturity on a basis much lower than the cost they now stand on the books, and, of course, very much lower than the amount at which they have been appraised; that he does not know that the company would have a right to keep alive the leases by simply drilling a well unless the owner renewed it; that he does not know whether the company could divest itself of its property by forfeiting the leases; that he does not want to be understood as admitting that an owner is not entitled to the appreciation of the value of his property; that he says [fol. 704] that he is entitled to such appreciation; that he has approved Mr. Uebelacker's appraisal on the very principle that he thinks he fairly states the reproduction cost new of the property; that he differs decidedly with him, however, as to the method and results arrived at in determining the fair value of the leaseholds; that in his opinion if a value is to be considered it should only be to the extent of the used and useful proportion of it; that he knows, and everyone who has studied the subject knows, that when you are dealing with so uncertain a quantity as gas underground, uncertain as to all the major factors which go to make value, it is extremely difficult to evolve any theory that is practical and reasonable; now the company engineers have one theory; that he thinks that is wrong and

leads to an extreme result, but if that theory were to be accepted by the courts or commission then only five-eighteenths of that value should be included in the rate base; that it is difficult for him to say what value he would put on the leaseholds; that he can't say what theory of value is absolutely right, because that is for the courts and commissions; that he suggests, for the consideration of the courts and commissions, that knowing how uncertain and [fol. 705] difficult it is to determine the value of property of this character, but at the same time knowing that there has been appreciation in the value of all property because of the increase in the labor and material prices, the decline in purchasing power of a dollar, and those varying factors, and since the Government reports show that this average appreciation or adjustment due to the purchasing power of a dollar in its decline since 1913 indicates an appreciation of about 50 per cent, I think that if the company can show that it has invested here a matter of seven million dollars—actual dollars invested in these gas reserves—and that there having been an appreciation of approximately 50 per cent in property generally throughout the United States, that if it was given an appreciation in its leasehold actual investment to the extent that all property has appreciated on an average, which here would be $3,500,000.00, it would give a value for the leaseholds between ten and a half and eleven million dollars; that is one way of trying to recognize the appreciation of one class of property, which is very difficult by its nature of appraisal; that is only one method of arriving at it, and he would not say that even he would consider that as final, but submits it as something bearing on [fol. 706] the value of this class of property. In other words, if those who have invested in gas leases, as compared with those who have invested in other classes of property, receive the average increase in the value that other property has experienced, they are not being injured; it may be that those who have invested in one kind of property have made a larger profit, while those that have invested in farm lands have lost money, but if any industry receives the average it is not being abused; that he cannot see the reasonableness of a $33,000,000.00 value; that he may agree with Mr. Uebelacker and Mr. Davis that if the exchange theory is to be considered as controlling $33,-

000,000,00 is a fair figure, but then that only that which is used and useful should be included, because the public is paying for the carrying charges.

That the present United States Government index number is about 150 or 151, as compared with prewar prices; that it has been over [illegible] and is now fluctuating between 149 and 152; some classes have gone higher, others not so high; that is an average; that copper can be bought now for 50 per cent. in excess of the 1913 price, and that this is true of farm lands, which is a big class of property; that you can't buy natural gas at 50 per cent. over what [fol. 707] you did in 1913; you can buy rubber, you can buy automobiles, and you can buy a large amount of machinery and you can buy some classes of clothing at that rate; that he thinks it would be more accurate to get the appreciation in the particular class of property that you are valuing if the factors can be found that make this higher value; if you can find that the factors that make this higher value are factors under Government regulation, and not because of competitive conditions outside of regulation; that he does not mean to say that competitive conditions must not be considered, but that the value of a product cannot be determined on the basis of the next most available substitute; that the Supreme Court of this State has said that the company is entitled to appreciation, but was not entitled to measure it in the way it is sought to be measured here; that the court said it could be measured by conditions not affected by the rates fixed by public service corporations, but that this did not necessarily leave competitive conditions as the only factor from which to determine the values; that you have the analysis of the company's costs, you have many costs going into the selling price of gas besides the product in the field; that in arriving at the value of gas lands you cannot capitalize it on the basis of [fol. 708] the next available substitute; that some of the commissions have considered the question and said, "If there has been such appreciation let us work out some problem for apportioning this benefit between the public and the company;" they have done that in valuing water powers.

That his calculations are made upon the basis of the values indicated; that does not mean that that is what the

commission will do about it; that all of his exhibits are not based upon giving to the public the benefit of the appreciation in the value of the gas leaseholds; that No. 7 is based upon the basis of the value of 5 cents for the gas in the ground; that if gas was selling for 18 cents at the mouth of the well on the basis of this exhibit the return would be very low; there might not be any; that if the market value theory is to be accepted then whatever that market value is must go into cost, and if it costs 18 cents in the field the public will have to pay more for gas; that he is not arguing on that theory; that he merely says that if the market price of gas is 5 cents, as Mr. Uebelacker says, then the company is making money on that basis; that if the commission should accept that theory and the evidence shows that the market price of gas in the field has sub-
[fol. 709] stantially increased or has increased to 18 cents since Mr. Uebelacker's statement, because of more competition, the income would be reduced to a point where there is no return at all, for the reason that it would be worth as much or more in the field than the company is getting for it; that he has only a very vague idea of what is responsible for the price mentioned in the field, and that is that there is competitive bidding and things of that kind.

That there is another illustration in his exhibits in which he did not take all of the appreciation for the benefit of the public, and that is the one in which he apportions five-eighteenths of the $33,000,000.00 and recognizes the appreciation in that case very decidedly; that in that exhibit he sets up his judgment as to what is used and useful; that he does not think that any company could build a gas plant like the United Fuel Gas Company has on a five years' gas supply and at the rate of 20 cents a thousand cubic feet, and that he has not even been suggesting that; that there is nothing in his testimony and not even in his ideas that would justify that statement; that he believes the company should go out and acquire gas and leases; that it is a good thing for the public that it has that eighteen year supply;
[fol. 710] that it would be better if it had a twenty-five year supply; but he does say when the public is charged with the cost of the skill and judgment used in the acquisition of that gas and the cost of carrying it the public

should not be charged with the appreciation when later that property is dedicated to the public use; that he does not think what the gas leaseholds were valued at or what the company paid for them seventeen or eighteen years ago is necessarily any measure of their present value, but he thinks it is a measure of what the public should be charged with, since they have been carrying it; that on the assumption that the company put in several million dollars to acquire this gas field at a time when it was a purely speculative proposition, and when the people of Charleston and Huntington would not put up a cent for it, and for eight or nine years did not make a cent on it, and when it got to be a good proposition, that he would not say that the public should have all of the benefit of the advance, but that he can't get away from the proposition that if the company went out and bought it at that time and the public carried it that the public is entitled to a very substantial benefit by the advance; that it is his understanding that the [fol. 711] company has made a great deal of money and put their money back into construction, and if it did so the stockholders have received the benefits; that is, they put the money right back into the business and risked it again; that he thinks the statistics show that the stockholders got a very handsome return for their risk; that the mere fact that a dividend has not been paid does not prove that the stockholders have not been compensated for that; that the company purchases from 20 to 25 per cent. of the amount of gas it sells, and that in all of the accounts that gas is carried just at the amounts which the company pays for it; that it is acquired under contracts made some ten or fifteen years ago—at least, some of it—and that the public is getting the benefit of all those contracts; that those contracts are of some value, and would be if the company was to sell them; but if the company acquires them in the course of its business as part of its stock in trade, he don't see how they can be appreciated under Mr. Uebelacker's theory; if all gas, whether produced or bought, were put in at his estimate of 5 cents per thousand cubic feet, you would correct any unfortunate situation that might hang over from seven or eight years ago; that he does not consider that the contracts which the United Fuel Gas Company has to [fol. 712] purchase gas are of any value if the market price

is 5 cents a thousand, and that if producers are getting 18 cents per thousand cubic feet and the United Fuel Gas Company has a contract at which it gets it at 5 cents a thousand cubic feet that this may only be an individual case; that he is basing his estimates on market value; that assuming that the market value is 18 cents in the field and the United Fuel Gas Company has a contract at which it gets gas at 5 cents, the contracts are worth something, but not the difference between 5 and 18 cents, but that this difference is not taken into consideration in any of the exhibits; it is not included in the going value, and that he has made no independent appraisal of the natural gas reserves, but has based his testimony on the findings made by Mr. Uebelacker and Mr. Davis, and there is nothing to indicate that they took that factor into consideration, and it is not present in his calculations; that he did not make any appraisal of the company's property to check the appraisal made by others; that he checked Mr. Uebelacker's report, found it to true in most respects; as to the inventory and reproduction costs it is correct; that he checked some of the items to find if they were correct, and if he had found Mr. Uebe-[fol. 713] lacker's costs to be too high or too low he would frankly say so; that he thinks they are right; that he has checked them with unit costs he has made in other appraisals and appraisals he is making now, and thinks the appraisals are very fair and a very excellent statement of the reproduction cost as of the date that is shown; that his reproduction cost and Mr. Uebelacker's are exactly the same; that they agree there; that he does not believe that the reproduction cost is 50 per cent. in excess of the original cost; that if there have been additions to the property in the last year, that is, during 1924, they should be added to his reproduction cost; that that would simply bring the inventory and appraisal down to date; that the plant which he examined was in good working order and first-class condition to perform the functions for which it was intended; that assuming that there was added to this plant during the year 1924 ninety additional wells, a new compressor station, and other entirely new appliances, and that the amount of gas sold notwithstanding these additions was less than in 1923, that he would say that the trend in the price of gas was upward; that it is a fact that as the gas

field gets older and the pressure is relieved it costs more money to produce the gas, as a general rule, and that he [fol. 714] would expect that the company would have to add additional units to its plant in order to produce from that field the same quantity of gas it is now producing with its present plant.

That he has depreciated the plant not by any single percentage; the straight-line depreciation is applied only on that class of property whose live would terminate on the exhaustion of the field, and there he depreciated it on the year-life basis for the class; he has not used any percentage because the life is different on each class and the percentage would be different; in the operating expenses there is a depreciation factor; that as to these items of depreciation it is based on a future life of the plant of eighteen years from the first of January, 1924; and that assumption is based upon the further assumption that there will be the same quantity of gas produced from the field each year thereafter; that he does not expect that the assumption that there will be the same amount of gas produced each year in the future that there has been in the past will be realized; that there is no possibility that it can be done each year; that it may be that the company will drill more one year than another or get more desirable gas production [fol. 715] one year than another year; that he supposes Mr. Davis took that into consideration; that he mentioned all those factors and stated how promising some sections of the field were that the company is approaching; that ordinarily as the field approaches the end of its life the production grows less and less; that applying the straight line method of depreciation you would be collecting as much for depreciation at the eighteenth year as the first year; that this would not make the price of gas so high that it couldn't be sold, because the management would anticipate that situation ten years from now, because it appreciates that fact very well at the present time, and will adjust its fixed charges accordingly; that good management will do that; by the fixed charges he means depreciation; that depreciation is the matter that is now sought to be adjusted, that is, the amount that would have to be taken care of if the nature of the business, because of the life of the field, made it necessary for them to charge more for one year to

get their capital back, they would be perfectly free to do it, for the purpose of making a rate today, eighteen years before the situation you anticipate happens.

[fol. 716] That the theory of amortizing the plant on the basis of each thousand cubic feet of gas that comes out is all right provided the amount included in the charge per thousand cubic feet is the amount that will retire it on a proper basis, and that the first thing to do is to find out what amount of money it takes to do it, and after this is done it is easy to distribute that over the gas at so much per thousand cubic feet, and that that is the logical way to do it, but that does not prevent you from adjusting your capital value accordingly, and that if it is all taken out in one year or in fifty years it would make no difference as an operating expense, but it would make a difference as a capital value; that the question of time enters into it even if you amortize it at so much per thousand cubic feet; it enters into the amount of money that you must get back again; you may have to raise or lower that rate according to all these uncertain factors with which you must contend; that you have capital value on certain classes of property you want to get back in eighteen years, assuming that you have eighteen years operations; there will be fluctuations, but then it is not so important; but these factors that determine the life of the property are themselves uncertain, so it cannot be [fol. 717] made exactly accurate for eighteen years; that it is not understood that the commission will fix a rate now for eighteen years, but in fixing the rate it will look into the future for a reasonable period, but not for eighteen years ahead, but that all of these things must be taken into consideration; that all of the theories he advanced are analyses for the purpose of disclosing the weakness in the theories that the company's engineers have relied on; that he is not advancing any theories, but is criticizing theories that have been advanced by them; that he has showed the logic to which the inaccurate application of a theory would lead, and has showed what would be more fair under the circumstances.

That courts and commissions have held that the exchange theory of value could not be used in appraising natural resources devoted to public utility service, illustrated by means of the railroad rate making and also the appraisal

of water powers; that he does not mean to say that in those instances the cost of the property is to control; that he does not think it should control; that the United States Government has spent large sums of money to ascertain the present value of the railroads for rate making purposes, but that it has not applied the exchange theory, but has attempted [fol. 718] to find the reproduction cost of the property embracing labor and material; that it is not appraising natural resources on the exchange theory basis; they are appraising the lands owned by the railroads on the basis of the selling price of adjoining similar lands, which is an open market proposition; land is not a property that is capable of monopoly power exercise; that natural gas reserves should not be appraised on the same basis because a natural gas reserve is a natural monopoly; labor, building material, steel are not natural monopolies; they are commodities that move freely in trade, for which there is a well established market, and when labor and material prices advance the products or the results of labor and material expenditures will advance in price; that the same rule would not apply to natural gas resources or to water powers, because if it were applied the public would be deprived of the natural gas resources or the water powers, since it would be charged for their products on the same basis that it would have to be if those resources or reserves were not present at all; that he does not maintain that the public owns the gas; that it emphatically does not own it; that the company owns it; but that the company has a [fol. 719] certain duty to the public on the sale of it; that it is entitled to a reasonable return on its fair value, and that fair value is not measured by the extent to which you can exploit it as compared with the next substitute service; that it is a very difficult matter to determine how to arrive at the fair value; that he has given one method of arriving at it; that he does not think what people would be willing to pay for it would be any measure of arriving at the value unless you knew the circumstances under which they made their estimate and the purposes for which they were going to apply that gas, and whether they would apply it to uses subject to public regulation or not; if he could obtain gas in a certain section of West Virginia and sell it to certain manufacturers who themselves were making huge profits

he would pay more for the gas, but if he chose to dedicate it to the public service he could not capitalize the gas on the basis of what he might make in another field under different conditions; that he would not say that the commission should exclude all elements of competition in arriving at value, but that this should not be accepted as the only measure of value; that it is entitled to some consideration; that there are many factors that affect value, and that [fol. 720] not any one is controlling; that he thinks that elements of value that arise from competitive conditions are to be considered; that there is also the element that the public has to pay the operating expenses under which these leases were acquired and has paid their carrying charges; that is an influence in the other direction; the fact that labor and material prices and commodities generally have advanced in value, that is in favor of an appreciation for gas leases; that it is true that in a purely private business the owner attempts to make his customers pay his running expenses, but that he does not turn around and capitalize against them the product which he has asked them to carry; that the coal business is not a business devoted to the public service like a utility, and that he does not know that the producers of coal have recently received many, many times what they have invested in their property as returns on that investment; that he put in the study in regard to coal prices to show the uncertainty of coal prices and the unreliability of the price of coal as of December 1923 remaining a fair index of coal values for eighteen years in the future; just the opposite conclusion is to be drawn from the situation stated; the coal business is in a lamentable condition because they have been trying to do the very [fol. 721] things that have been here suggested; they have been trying by artificial means, in other words, to lift themselves by their own boot straps; it is a competitive business, and they have tried to take it out of the effect of the laws of supply and demand; that he does not mean that the operators alone have done this, but that the operators, labor unions, and political situations have all brought about an unfortunate situation in the coal business, which is now being corrected, just as those factors have brought about, in a somewhat different way, an unfortunate situation in the agricultural fields of the West; that he filed the statement

in regard to the coal situation to show that the price of coal would not likely remain the same for eighteen years; that he cannot say that Mr. Davis's conclusions should not have any weight; that his study, however, goes to prove that Mr. Davis's conclusions are not entitled to the weight that he thought the commission should give them, because if the commission will consider the conditions prevailing in the coal fields it will not say that a $4 price in Pittsburgh on December 31, 1923, is a fair price upon which to predicate a value for eighteen years in the future; that the [fol. 722] commission could change the rate, however, whenever the price changes; that coal is cheaper today than it was in December 1923; that he has the figures in the Pittsburgh and Cincinnati markets, and the price of coal Mr. Davis used is from 10 to 20 cents a ton less than Mr. Davis testified to; screened gas coal in Pittsburgh, December 31, 1923, was quoted at from $2.40 to $2.60; the price today is $2.30 to $2.50; Pittsburgh gas mine run coal was in December 1923 quoted at $2.20 to $2.30; January 1925 it is quoted at $2 to $2.25; the same condition is true in the spot coal market price, and the same or greater variation—a larger variation—has taken place in the price of Kanawha coal f. o. b. Cincinnati, where, in December 1923, the price was $3.89, and the last quotation he has is October 1924, which was $3.39, while the spot price in that market declined 3 cents. These statistics are taken from the monthly averages of the United States Bureau of Labor Statistics of wholesale prices of coal reported in their bulletins.

That the tendency of coal price is to go lower, but that he thinks the margin of profit is going to be larger; that he has no idea when the decline in the price of coal will stop, [fol. 723] but that the decline in price is not so important a factor; the price will stop going down just as soon as the coal mines will adopt modern machinery and scientific methods, will consolidate their properties, eliminate overhead, eliminate waste and bring about the maximum production in the naturally richest fields; that is what must come about in the coal business to save it, and that is what has been done in every industry that has gone through the period of inflation and deflation since the war; that the Kanawha field is one of the richest coal fields in the country, and if it would get away from the errors he has mentioned

it would become one of the most prosperous fields in the country.

That he is familiar with the conditions in union labor coal fields and those where there is no union labor, and those coal mines which have broken away from old fashioned methods by the use of modern machinery as compared with those that have not. For the last five years, while certain people in the coal trade have been predicting a return to high prices, economic law has relentlessly pushed them down, and until they see the handwriting on the wall and adopt those methods that other industries have there will be no relief in the coal fields. They cannot longer continue that process. If anyone thinks that they [fol. 724] can, look at the strides in the electrical development and the substitution of oil for coal. These enormous changes and development are being stimulated, more or less, by the situation in the coal industry.

That in his opinion there should be allocated to the gasoline business 24.6 per cent. of the property that is used jointly in gas and gasoline operations; that the reason he assigns 50 per cent. of the net proceeds of gasoline to the gas business is because there are many factors in there, the element of profit in the gasoline business after it leaves the jointly used physical property. There have been large joint expenditures through physical facilities and through operating expenses, and I think that a part of this profit should go to the gas department; it should not be served on a cost basis. That the use of 50 per cent. of the net receipts is an arbitrary figure, and that after making a study as fully as he can and recognizing the uncertainty of it, he thinks the profits and the losses should be shared on a fifty-fifty basis; that is what he means to say. That there is invested in the gasoline properties more than $2,700,000.00, and that the gasoline company should be entitled to a fair return on that; that a fair return on that would [fol. 725] be considerably in excess of 8 per cent.; that a return of 10 or 12 per cent. would not be at all an attractive investment over a period of years; that they have had a hard time for the last two years; that he would not know just what a fair return would be; that ordinarily in a business of that kind you would expect it to pay 10 per cent.; that there would have to be provision made for depreciation or amortization or whatever you call it; the invest-

ment would have to be retired over the life; that he does not know how long it has been in service; that if it has eighteen years further to go it might be over a period of twenty five years or more at 3½ or 4 per cent. a year; that he couldn't say whether the gasoline plant would have to be renewed frequently or not; it may; that he does not know just what the details of the property are; that if it is a shorter lived property naturally the rate would have to be higher; the gasoline producing station or manufacturing station would have to be renewed in less than thirty years; that the rate of depreciation on that class of property is rather high; that he thinks 10 per cent. a year for depreciation on it would be rather high; that that is about the rate that is generally allowed in a manufacturing business on [fol. 726] machinery operating under high speed and strain; that you can never have depreciation and amortization both; that your reserve will take care of part of the renewals, and as most of the property, or some parts of it, will probably last the full twenty or twenty five years, whatever the life would be, there your depreciation reserve would restore the capital without any more amortization; as to the rest of it, there would be some overlapping of the two charges; that of course this would have to be taken out before there is any fifty per cent. to divide; that he did not check Mr. Uebelacker's appraisal of the gasoline property, but that he will accept his figure; that assuming that there is $2,700,000.00 worth of property in the gasoline business, and that there was a return from that property of $500,000.00 last year after paying expenses of operation, he would think that after all expenses have been taken care of that the profit resulting from the business from a correctly proportioned analysis should be divided equally between the two departments; what it amounts to in dollars and cents he cannot say; that if there was $512,000.00 last year above expenses, 50 per cent. of that would be $256,000.00, which would be turned over to the gas company, assuming [fol. 727] his figures to be correct, and the gasoline company, out of the remaining half, or $256,000.00, would have to take care of the profit on its investment and amortization and depreciation, and that if the value of the property is $2,700,000.00, $256,000.00 would not be enough to pay a fair return on it and to provide for depreciation of the property; if those are the only factors that enter into it;

that he cannot say what other factors would enter into it, but will check it up and testify further; that on that basis the gasoline company ought to have more than $260,000.00; that it ought to have the depreciation and it ought to have 10 per cent.; that 10 per cent. for the depreciation ought to be taken out of the gasoline company's part of the earnings.

That Mr. Uebelacker's overhead charges are too large; that he never built a plant like the United Fuel Gas Company plant; that he never superintended the construction of a plant like it, but that people in his firm have; that he never kept the account of overhead charges in the construction of a plant like that, but that he has analyzed the cost of construction of a good many and knows what they do amount to; they don't run that high; that the reason he can- [fol. 728] not run as high as Mr. Uebelacker is because he has items of expense in there that the witness thinks on their face are perfectly clear. The item of financing, 4 per cent. financing cost, should be distributed over the period for which the financing was incurred; that if someone has to be hired to sell the securities it has to be paid for, but it should not be charged to the plant; classifications of accounts show that financing is not to be charged to capital, but that it comes out of the rate of return; that what he means is, the company is allowed a rate of return say of 8 per cent.; you are selling some five per cent. bonds in an unfavorable money market; those bonds were sold at 90; that merely is an index and factor of the cost of money; if the bonds had been 6 per cent. instead of 5 the discount would have been less, or might have been wiped out; that he understands Mr. Uebelacker does not say this amount is the discount on the bonds; it is the sales cost; but the sales cost of the securities is the cost to sell them under a proper financial program, which has a definite period, and must be amortized over that period as a part of the money borrowed or money raised; his 4 per cent. is not an unreasonable figure for the cost of financing, but it is an improper [fol. 729] charge to include in capital; that he does not allow it in the annual expense, but says that it should come out of the return; the 8 per cent. return is not included in the operating expenses; that is the amount we are trying to determine after the operating expenses have been left; and just as the company has to pay its interest charges

and a part of its capital out of the 8 per cent. return on its entire property, so it must pay what the financing costs on an issue of twenty or thirty or forty year bonds over the entire life of the financing; it is an expense item and not a capital item; that it should not be, however, included in operating expenses; that it is one of the costs that comes out of the 8 per cent return.

That this is the largest item that Mr. Uebelacker has included that is not correct; that the only other one that he thinks is too high is the interest during construction of 8 per cent.; that he thinks that is too high; that he thinks interest during the period of construction should not be higher than 7 per cent.; that he thinks this company, with these enormously valuable gas reserves, the territory in which it is operating, the business which is available for it, could finance itself on a year-to-year basis with 7 per [fol. 730] cent. money; that he thinks it could do this while it was building the plant; that he does not believe it would cost over 7 per cent. on the money market to finance it; that it must always be explained in the light of the financing, the business conditions at the time, the money market at that time, the form of loan, whether it is a first-mortgage bond, whether it is a note, whether it is a stock sale or whatever it was; that he thinks he could market a 6 per cent. first-mortgage bond at the time he made the inventory on a property that had no plant but was just simply getting ready to put in one on a 7 per cent. basis; that he has no particular plant in mind that was financed on such a basis, but he studies many instances of financing every year and does not recall any specific instances, but is satisfied that 7 per cent. is a fair cost of money for what would be borrowed in the year 1923 market.

That you would not sell an eighteen year bond for the entire value of the plant; the plant is not financed during construction on eighteen year bonds; you finance on temporary borrowings till your plant is up and then you finance with permanent bonds; that the temporary financing should be done on a 7 per cent. basis during the period of construc- [fol. 731] tion; of course, temporary financing costs more than a ten-year basis; that he could get the money on a 7 per cent. basis with all the assets that the company has back of it; that in talking about interest during construc-

tion eighteen years does not apply, but that he does think that an eighteen year bond showing 8 per cent. return would enable you to finance on a basis of 7 per cent., with a one per cent. margin of profit over eighteen years; that he has heard some evidence to the contrary, but when it is analyzed he thinks it will appear that they are talking about something else; that he has not examined Mr. Dickinson's testimony on the subject, but is merely testifying that a 7 per cent. overhead charge is an ample provision for the capital charge.

That those are the only items of overhead charges included by Mr. Uebelacker which he criticizes, that is, the interest during construction and the cost of financing; that he figures overhead charges as follows:

Engineering, both preliminary and during the period of construction, 6½ per cent. I have allowed for engineering more than Mr. Uebelacker has. He has engineering and superintendence ranging from 2½ per cent to 7 per cent., with 3 per cent. in two accounts, 2½ per cent. in one [fol. 732] account and 7 in a fourth. He has preconstruction costs at 2½ per cent.; I am allowing 6½ per cent. on the entire property.

Administrative expense is 2 per cent., same as his; legal expense, 1½ per cent. I have the same figure. Insurance and taxes, one per cent.; interest during construction, 7 per cent., total 18.

Now, these overhead charges must be considered in connection with the direct charges that Mr. Uebelacker has included in his unit costs. He has liability insurance in there on labor at one per cent., loss and use of tools, 1½ to 2 per cent.; field supervision from ½ of 1 per cent. up to 8 per cent.; timekeeping, 1 per cent., contingency from 2 to 5 per cent. On his material he has ½ of 1 per cent. for purchasing, ½ of 1 per cent. to 4 per cent. for warehouses, and his contingencies there range from 2 to 4 per cent. Those are all fair allowances, but on a set up of that kind 18 per cent. for general overhead charges is fair. I am not standing alone on that. Analysis of the decisions of the public service commissions of the appraisals of natural gas properties will show very few instances where they allow over 18 per cent., and a few where they have allowed 17 per [fol. 733] cent. They are not all wrong. The argument

arises how you will divide this. Some of these charges will not be incurred to the extent shown. That is an estimate, but the 18 per cent. is inclusive of all items I have referred to as a general overhead charge.

That such holdings were made in the case of Southern Gas & Electric Company by the Public Service Commission, the Natural Gas Decisions before the California Railroad Commission, the decision of the Oklahoma Corporation Commission in quite a large number of natural gas cases, including the Oklahoma Natural Gas Company, the largest property they had in that state, the decision in Little Rock, Arkansas, and he thinks there are decisions of the Ohio Commission on that; that the commissions in ascertaining these overhead charges based their findings upon the evidence, and the evidence generally shows that a proper allowance for overhead expenses is 17 or 18 per cent; that there is very little evidence that the commission has accepted for larger overheads; that he knows of no case where the commission has allowed more than 18 per cent on the entire property; that he has no doubt that there are some contrary cases, but the general rule is as he has [fol. 734] stated; that there is a good deal of uniformity in this rule; that it differs for different kinds of property; that there is a good deal more overhead on one plant than on another, and it ranges from 18 per cent down to 12; that on property that requires a long period of construction, like a hydro-electric property, the general overhead may run to 25 per cent; that it would not require a long time to construct the United Fuel Gas Company property; that you would put part of it in use while you were constructing the rest; in a hydro-electric plant you can't operate anything until your dam is completed. Here as soon as you bring your plant to Charleston you begin to earn money on a part of it; you go to Huntington and you earn part; you extend your line to Cedarville and you begin to earn some money; that the overhead costs in building transmission lines and work of that sort would be a great deal more than in building a house; that there would probably be a construction period of two years on the largest single factor, and measuring your interest rate on one-half of that period, your interest charge might be 10 per cent, but here is an interest charge on all of the property; Mr. Uebelacker has put 26 per

[fol. 735] cent on transmission property, 21½ per cent on production system; that he agrees that the overhead charges are much higher on transmission, but if you take out the cost of financing and some of the other items there and bring it down to the more general allowance for overhead charges, 18 per cent of the entire property is a fair allowance.

That he has assumed that the plant has a life of 18 years and has to be amortized in that time, either retired, replaced through the depreciation reserve, or amortized; that the company is entitled to the capital back; that if it was all going to last until the end of 18 years it would take one-eighteenth of it each year to get it back, and if there were any replacements of any sort that would be in addition and would require something more than the one-eighteenth; that it would require more than one-eighteenth of the property every year to keep the property up to 100 per cent efficiency and then retire it at the end of eighteen years, because some parts of the property would have a life of less than eighteen years; that he has made no study of the amount necessary for each year; that he has not a copy of the book costs of the property and does not know what they are; that he thinks they are about $26,000,000.00; that there is some [fol. 736] property that could be sold; that is, there would be some salvage; that he does not know just what the testimony is as to that, what the total amount would be that would have to be retired; that he has made no study of the depreciation rate; that he does not know the actual rate that would be necessary for depreciation, but thinks that the rate of 5 1/3 per cent testified to would be ample for the purpose—its own practice indicates what the company thinks of it; that this would be sufficient for the maintenance of the property, and since the large part of the property will be retired through the depreciation reserve there is very little left for any other charge; amortization is not an important factor; that he thinks the depreciation reserve will maintain the integrity of the property very well; that when the eighteen years expire the company will have the property back through the depreciation reserve, except that property which has an unexpired life and represents recent renewals, and will have to have an amortization on that, and that will be a very small amount, because he can't imagine the company making any very large expenditure for plant when

the exhaustion of the field is within two or three years staring it in the face; that it may be that there will have to be expenditures for more compressors, but they are not an en- [fol. 737] tire loss; they can be moved from one place to another; there is a large salvage value in any compressor you put in within two years in the field; that it could be used somewhere else in some other fields or some other lines in the state; that he does not know how many other lines there will be in the state in eighteen years; that compressors are shipped to Oklahoma, Kansas, down in the state of California; that it is just as likely that eighteen years from now there will be further gas reserves found, and that the provisions that have been made for depreciation and amortization will have pretty well retired the plant by that time and still leave the company with property that it can use for five or ten years in the future; that he thinks it is a reasonable assumption that new fields will be discovered; that he has been hearing the same kind of testimony about amortization every time he has been in West Virginia, but he does not see that any recognition is given to it in the rate base on this property; that Mr. Davis says in his report that the life of the field is eighteen years; that the entire set-up of his appraisal is on the basis of eighteen years, and that is the appraisal he is talking about; that is his appraisal of the gas reserves; this is indicated in his Exhibit Z; that [fol. 738] Exhibit Z is a hypothetical exhibit and that that is the report to which he has given all of his attention, and it was also his estimate of the amount of gas which he assumed would come out in eighteen years that Mr. Uebelacker accepted and on which he applies 5 cents per thousand cubic feet for gas underground; that he is not testifying as to the life of eighteen years, but only assuming it, and that he is assuming that they meant what they said; that he is talking about Mr. Davis's Exhibit No. Z, on which he bases his appraisal of $33,000,000.00; that he is appraising the gas underground, which in his large exhibit No. 1 he determines to be the value of the assets that he appraises; that he refers to it in the text of the report as an eighteen year period; that he thinks the theory of the company advanced in this case has some application to a number *number* of years, but that his criticism would be exactly the same no matter whether you have eighteen years or fifteen years, and that

it is stated in the exhibit that it is eighteen years because if you take out the same quantity of gas that was taken out in one year it would take eighteen years, and that his criticism would be just the same if he found 25 years, but that [fol. 739] if he found 25 years the depreciation and amortization charge would be a much lower amount; that whether you accept the estimate of Mr. Davis as eighteen years or twenty years or any other number of years, his criticism would be the same as that embodied in his exhibits, with the exception that in the case of twenty years there is being too much charged in operating expenses for depreciation, and the depleted value of the property would be higher in that event; that one of these items would not offset the other, because there are a good many other factors that come into it; there would be various classes of property that he might say would have a reasonable life of fifteen years that would not have a reasonable life of twenty-five years during the period by which Mr. Davis would extend the life of his field; it might be just that margin that would throw some classes of property from one group into the other, that is, that would have to be renewed during the life of the field and would not have to be renewed; it is not a factor of great consequence, but from a mathematical standpoint it would have that effect; that he has not fixed any life on the field; he is not a geologist in gas matters, but that in former hearings affecting this company eminent geologists have testified to a life of the field very much [fol. 740] shorter than eighteen years; that his exhibits are based on Mr. Davis and Mr. Uebelacker's exhibits, and if they are based on an eighteen-year life his are; that his is a criticism of theirs, and is not an independent valuation; that he based his depreciation on the assumption that they meant eighteen years when they said it; that if the gas field is exhausted in five years the depreciation rate would be a great deal greater; that Mr. Uebelacker has not made any statement as to the life of the field, but he has based his report on Mr. Davis' finding as to the amount of gas in the ground, and Mr. Davis said the gas content would have to be taken over eighteen years.

Redirect examination:

That on the assumption that there was invested in the gasoline plant $2,700,000.00, and it appeared that the earnings on such a capitalization during 1924 amounted to $550,000.00, and for 1923 the net earnings of the same company were $1,868,000.00, and for the same company during the year 1922, $2,200,000.00, and in 1921 $1,999,000.00, and for 1920 $2,640,000.00, he would say that the earnings for 1924 reflected an abnormal condition—that is, they are below the normal established in previous years—[fol. 741] and that if the books of the gasoline company showed net earnings as indicated above, he would say that the condition of the gasoline business during 1924 was abnormal; that the 7 per cent. which he has included in his valuation for interest during construction does not mean 7 per cent. per year, but it seems that all the interest charges, which would only be incurred in providing funds during this period of construction, would aggregate an amount equal to approximately 7 per cent. of the direct labor and material expenditures; it may be that the company would pay eight or nine per cent. for some money; it may be it would pay less than seven per cent. for some money; on part of the expenditures for construction, where the time might extend over two years, since the beginning of the two year construction period would find the company with no cash on hand and no expenditures for the two-year period, consequently the interest rate, whatever that may be, can be computed for one-half only of the time of construction; as to the transmission lines, the construction will undoubtedly be two years; as to the minor accounts, installation of the distribution system and distribution accessories, the construction would be comparatively [fol. 742] short, so that the interest rate would not apply on those classes even for the entire year; seven per cent. would not necessarily mean that the company could not incur more than 7 per cent. cost for financing, because being a series of temporary loans, or possibly one continuous problem for the two-year period, various are provided for.

Recross-examination:

That in the exhibit filed by him with his testimony in regard to gasoline stocks he showed that gasoline stocks were

going down; that he finds that there has been an increase in December of gasoline stocks on hand, as appeared in this morning's paper, which is a reflect of a seasonal condition; the stock of gasoline always increases during the month of December because of the great reduction in the use of motor vehicles as compared to the summer months, and it is during the winter months that the surplus stock must accumulate to take care of the rapidly increasing consumption in the summer months. The conditions there are reflected in the statistics in exhibit No. 8 for 1923, where the monthly data is presented; it is also true in the years 1922 and 1921, for which the monthly statistics, however, are not contained in the exhibit. The increase for Decem- [fol. 743] ber is a normal and natural condition due to seasonal operations, that he does not know that the stock of gasoline in December 1924 was the largest in the history of the business; that he believes it is not the largest in the history of the industry; that it is a relative condition, and assuming that it were the largest in the history of the industry, it could be considered only in relation to the consumption, which is breaking all records in the relationship between the consumption and the stock on hand; that the large amount on hand in December is accounted for by the fact that in the winter there is little consumed and that the stock is saved up for consumption in the summer months, when there is a large consumption; that there was not more consumed in the month of December than during any month in the year; that he has not the consumption for the month of December, and only knows what it was by the newspapers; that the domestic gasoline consumption in November was 695,000,000 gallons; that in July it was 789,000,000 gallons; August was the highest month in the year; November was 695,000,000 gallons, an index number of 243. Now the gasoline stocks during those same months were, in July, 1,470,000,000 gallons as against the November figure [fol. 744] of 1,133,000,000 gallons. The index number for the gasoline stocks in July was 311, compared with an index number of 239 in November. The highest gasoline stocks on hand during 1924 was in June, when the stock was 1,649,000,000 gallons and the index number stood 349; that in January it was 1,200,000,000 gallons, and the index number was 254; that in February it was 1,383,000,000 gallons and the index number 293.

(And the said W. J. Hagenah testified in open court in substance and effect as follows:)

That he has taken Mr. Jirgal's Exhibit No. 6 as to the investment in property of the company from 1909 down to 1923 and reduced or brought it into 1924 dollars, according to the Bureau of Labor index numbers; the index numbers used by him are from the United States Bureau of Labor, taken from its monthly publication known as the Monthly Labor Review; that he has taken the total net additions to the company's properties by years from 1909 to 1923, as set forth in detail in Jirgal Exhibit No. 6, and deducted from these additions the investment each year in gas acreage, and in the third column of the statement shows the physical property additions; that he then shows the [fol. 745] index numbers for the corresponding years as determined by the United States Bureau of Labor, the index number being the one reflecting all commodity prices. Because of the general increase in the level of prices since 1909 and the decrease in purchasing power of the dollar, he converted the dollar expenditures as made by the company as shown on its books for each year from 1909 to 1923 on the basis of the corresponding index number for that year, as compared with the period of par. The total net additions as shown by the company's books in Jirgal Exhibit No. 6 are $26,288,912.00. The acreage acquired, including the acreage in 1909 owned by the company, is $6,343,332.00. Deducting this from the total set forth in the first column shows physical property additions of $19,945,579.00. These are the actual dollars expended by the company based on the purchasing power of those dollars for the years in which the expenditures were made. Applying the index number in detail year by year this $19,945,579.00 is increased in terms of dollars to reflect the same purchasing power based on the index number for 1924 to $24,546,709.00. Adding to that the book cost of the acreage as adjusted and set forth in Jirgal Exhibit No. 6, namely, $6,343,332.00, makes the total $30,889,041.00. That [fol. 746] he has applied this index figure to the reserves as well in the second part of the table; that he shows it both ways, first increasing the physical property to reflect the change in the purchasing power of the dollar, plus the book cost of leases, and second the physical property expendi-

tures, as thus converted, plus the lease investment also converted on the same basis. Applying the same index number, the lease investment is increased to $9,495,920.00, making a total converted on the basis of 1924 dollars of $34,042,229.00. That in this way he has reached what should roughly correspond to a reproduction value of the physical properties of $24,546,000.00; that the figures of both sides show a reproduction cost considerably in excess of this, not less than $29,000,000 and something; that there are two reasons which appear for this difference. In the first place, the index number reflecting the commodity prices is not necessarily the same as the index number of those articles or items of labor and material entering into the cost of gas property. The second explanation is that on the books of the company there appear only the overhead charges actually incurred and charged to plant; whatever overhead charges may have been incurred and charged to operating expenses are not included in the plant account. [fol. 747] In the appraisal or theoretical reproduction of the property allowance has been made for overhead charges, and there he used 18 per cent. and the company used amounts ranging from 21½ to about 26 per cent. on different classes of property. As to labor and material prices, both parties agreed. On the inventory they also agreed, or rather, he checked the inventory. That the difference between the reproduction cost of the physical property as determined by appraisal and converting the property on the basis of the index number is due to the fact that the book cost included only the overhead charges as actually incurred and charged to plant; secondly, there are variations in the index number of those commodities which are important factors in gas properties, and not exactly in the same proportion as the change taking place in all commodities averaged. That his experience leads him to believe that the cost of public utility construction work for both labor and material is somewhat higher than the average of all indexed commodities as reported by the Bureau of Labor. The indexed number of commodities as reported by the United States Government has dropped down below that of public utility property by including many articles which suffered severe deflation following 1920, such as cop- [fol. 748] per, farm products, certain metals, rubber and

some chemicals. On the other hand, to some extent that is offset by the extremely high price level which has obtained for household furnishings, which represents quite a factor in the Government figures, but in general the tendency is the same, the difference being one of degree rather than character; that it is true that the pipe and things of that kind that the public utility purchased have deflated less rapidly than the average; that one of the reasons for this is that the United States Steel price index has not come down as fast because of the accumulated building demand and public utility demand during the war period which has kept up the prices, and the percentage of labor in public utility construction work is a little larger than the average for the raw materials which make up the commodity index.

That his reproduction cost new, exclusive of the leases and also of working capital, is $24,000,000.00.

Cross-examination:

That he checked Mr. Uebelacker's appraisal of the property in detail, and that he is satisfied with it; that he and Mr. Uebelacker differ wholly on depreciation, as he has [fol. 749] heretofore explained, but that this arises not because of any difference in fact, but a difference in theory; that he agreed with Mr. Uebelacker as to depreciation where he thought the inspection method applied, but departed from him in those instances where he thought the life of the property depended on the life of the field; that if he had applied the inspection method that Mr. Uebelacker applied he would have come to the same conclusion, and if Mr. Uebelacker had applied the straight-line method he would have come to the same conclusion as the witness.

C. E. Krebs testified in substance and effect as follows:

That he lives at Charleston, West Virginia, and is a member of the firm of Clark & Krebs; that he is a mining engineer and geologist, and has been engaged in that business for more than thirty years; that he is a graduate of West Virginia University in the year 1894, and for three years thereafter was doing engineering work, construction of railroads and surveys and construction and so forth;

the next few years, up to 1909, he was doing mining engineering and general engineering in the southern part of West Virginia, construction of coal plants, development of coal property, studying the geology and working gener- [fol. 750] ally along the development of the resources of the state; in 1909, until 1915, he was assistant geologist to Dr. I. C. White in making detailed reports on the several counties of West Virginia; that his work consisted principally of the counties in the southern part of the state; in 1909 to 1911 he gathered geological data of the counties of Jackson, Mason & Putnam, and prepared those data in manuscript form, together with maps, and reported the same to Dr. I. C. White, who edited and published the detailed report in book form of these three counties; in 1912 he did the same work for the counties of Cabell, Wayne and Lincoln, and gathered up the manuscript, maps, and so forth, and submitted to Dr. I. C. White, who published in 1913 a report of those three counties; in 1913 he made a detailed study of the geology of Boone county and submitted his maps and manuscript of that county, which was published in book form by Dr. I. C. White; in 1914 he did the geological work of Kanawha county and submitted the maps, report and so forth to Dr. I. C. White, which report has been published; in 1915 he studied the geology and resources of Raleigh and part of Summers and part of Mercer, the report being published in 1916 by Dr. I. C. White; during that time his work also took him throughout [fol. 751] the state, gathering data on oil and gas for the map of West Virginia published by the Geological Survey, which data were submitted to Dr. I. C. White and later published, and ever since 1916 he has been doing geological work and mining engineering up to the present time; that work has taken him over the entire state of West Virginia, also in the states of Ohio, Kentucky, Texas, Arkansas and several of the western states; that the Dr. I. C. White referred to by him is state geologist of West Virginia, and that he is one of his assistants; that the investigations he made covered the oil and gas business as well as the coal business.

That he is familiar in a general way with the properties owned by the United Fuel Gas Company; that he has studied the geology of the counties named above where the

United Fuel Gas Company properties are located; that he has also gathered the data in regard to the oil and gas wells; then he has studied the oil and gas data on adjacent properties in other counties, like Roane, and in Kentucky; that he has come in contact in his investigations with the matter of the extraction of gasoline from natural gas and has had occasion to consider and report on the value of [fol. 752] such extraction privilege; that in his investigations there have come to his attention cases of the sale of the extraction privilege of natural gas, and that in these observations he was representing clients; that the conditions in regard to the sale of this privilege usually arise or are involved where the company having the gas will furnish it to another company, an operating company, which extracts this gasoline for a percentage of the gasoline, or, in other words, on a royalty basis, whereby a portion of this royalty goes to the company operating the gas wells or furnishing the gas and the remaining part goes to the company taking out the gasoline; that he usually figures on a royalty basis from a certain percentage of the gasoline extracted; that one company he has been doing considerable consulting work for is the Hope Engineering and Supply Company, of Mount Vernon, Ohio; it furnishes the machinery and will extract the gasoline for a certain percentage of the gasoline, or it will furnish the machinery and the owner of the gas pay for it, and it will look after the extraction for a certain percentage; that within the last week he had a client who asked him to get up figures on the extraction of gasoline from gas property, and he has a bona [fol. 753] fide offer in regard to the extraction of gasoline from a responsible bidder who agrees to furnish all the machinery and the expense of operating the same for a fixed royalty; that he does not now recall any other contracts; that in the last proposition mentioned by him there is involved about ten million cubic feet of gas per day; that the larger the quantity of gas involved the more valuable would be the privilege; that the value of this privilege would be more for the extraction of gasoline where a company had say 100 million cubic feet per day than where a company had only 50 million cubic feet a day; that this is because of the overhead expense, for one thing, all things being equal, and also it would give you a better chance in

the market for marketing the gas and also keep the running expenses lower than it would be with smaller production; that he knows the location of some of the gasoline plants of the Virginian Gasoline & Oil Company; that he thinks there are five or six plants; that they are located at convenient places along the railroad; that in the case of the ten million feet a day proposition above referred to by him, the contract or proposition is that his client furnishes the gas at some convenient point along the railroad and the [fol. 754] contractor agrees to construct the plant at his own expense, operate the plant at his own expense and market the gasoline, paying his client as a royalty one-third of the gross amount of gasoline produced, and placing this gasoline in tanks ready to be loaded on the railroad cars for the market; that from his experience and the study of the question and what he knows of the conditions appearing in the field, he would say that the value of the extraction privilege of the gasoline from the gas of the United Fuel Gas Company, it appearing that it sold about 47 billion cubic feet of gas in 1923, would be at least fifty per cent. of the net profits from the sale of the gasoline.

Cross-examination:

That the customary way of making such arrangements is for a royalty on the production produced; that he knew of one case where a royalty of one-third was provided for; that he has known of other cases where the work was done on a royalty; that where that is done it is sold on the same basis as oil, on a royalty basis, where they agree to put the oil in tanks for market on the same basis, except that the manufacturer sells the whole product and the owner of the gas gets his share of the proceeds; that he has known [fol. 755] of different royalties being paid on that basis; that he has known of royalties of one-fourth, of one-third, and that he has known where the royalties were one-eighth; that he thinks that the man who took it on a one-third royalty made a good contract for himself probably as well as for witness's client, particularly good for his client; that he understands the Virginian Gasoline & Oil Company has six or seven gasoline plants; that if they have twelve he is not acquainted with all of them; that he is acquainted with the Hope Engineering & Supply Company; that it

made a contract with the Charleston Dunbar Natural Gas Company for the extraction of gasoline through a subsidiary; that this contract was on the fifty-fifty basis he has spoken of, and that the subsidiary which made the contract failed, but that that wasn't necessarily the cause of the failure; there were other conditions besides the contract that entered into it; that at any rate it went into the hands of a receiver.

Redirect examination:

That the fact that there is a normal and steady supply of gas has something to do with the value of the privilege of extracting the gasoline; that he understood from knowledge that the gasoline contract had nothing to do with the [fol. 756] breaking of the Hope Engineering & Supply Company's subsidiary.

Recross-examination:

That if the larger supply of gas came when there was the lowest demand for gasoline, that condition would be taken into consideration; however, there are times when prices of gasoline are a little lower than at other times, but the larger amount would more than offset the difference in prices; that even though there might be three times as much gas delivered on some days as on others the value of the privilege might not be affected; this variation might be overcome by the large amount; that in case you had 47 billion cubic feet during the year and that was delivered at a uniform rate a day the privilege might be worth a little more than if it was delivered three times as much in December as in July, but the larger amount would not make enough difference to make it very essential in a contract; that it would be more valuable to have the amount regular; that the United Fuel Gas Company is in a business that makes the demand upon it very much larger in the winter than in the summer months, and its gas deliveries are approximately three times in the winter what they are in the summer; that assuming that the cost of the installa- [fol. 757] tion of sufficient compressors to compress the gas of the quantity that the United Fuel Gas Company puts through its lines each year were $2,700,000.00, and assuming that fifty per cent. of the profits of the gasoline say

for the year 1919 was 146 per cent., 1920, 140 per cent.; 1921, 100 per cent.; 1922, 102 per cent.; 1923, 80 per cent., he thinks legitimate capital could be obtained to pay the United Fuel Gas Company fifty per cent. of the net earnings as a consideration for the privilege of extracting gasoline from the gas that it puts through its mains; that he would like to have the privilege of having a contract like that, or having it financed by some of his clients, which could be easily done; that he thinks it could be obtained at a higher rate; that he would not like to state just the amount until he had gone into it further, but he would say that he could get more than fifty per cent.

STIPULATION RE STATEMENT OF EVIDENCE AND EXHIBITS

The undersigned, representing the parties to the above-entitled cause, here stipulate that the foregoing contains an accurate narrative of the evidence introduced upon the hearing of this cause, together with the exhibits and docu- [fol. 758] ments referred to and filed by the witnesses in so far as the same are material to the determination of the questions arising herein.

Harold A. Ritz, Attorney for Plaintiff. Howard B. Lee, Atty. Gen.; Fred M. Livezey, Paul W. Scott, George S. Wallace, Arthur G. Stone, Robert S. Spilman, Attorneys for Defendants and Intervenors.

ORDER SETTLING STATEMENT OF EVIDENCE

The foregoing narrative of the evidence having been prepared by counsel for the appellant, and notice thereof having been given to counsel for appellees, and no objections being made or amendments proposed, and it appearing to be true, complete and properly prepared, it is now approved by the Court and ordered filed in the clerk's office, [fol. 759] to become a part of the record in this case for the purpose of appeal.

Given under our hands this 5th day of June, 1926.

John C. Rose, Circuit Judge. Henry C. McDowell, District Judge. Geo. W. McClintic, District Judge.

VALUATION

UNITED FUEL GAS COMPANY
INCORPORATED

DECEMBER 31, 1923

UEBELACHER EXHIBIT NO. 1

FORD, BACON & DAVIS
INCORPORATED
ENGINEERS

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VALUATION

UNITED FUEL GAS COMPANY
INCORPORATED

DECEMBER 31, 1923

UEBELACHER EXHIBIT NO. 1

FORD, BACON & DAVIS
INCORPORATED
ENGINEERS

LETTER OF TRANSMITTAL

(Signed Copy)

FORD, BACON & DAVIS
Incorporated

ENGINEERS

Valuations Reports Construction Management

115 Broadway

New York, May 26, 1924.

United Fuel Gas Company, Incorporated,
Charleston, W. Va.

Dear Sirs:

We hand you herewith our report upon the valuation of the physical property, natural gas rights and leaseholds of the United Fuel Gas Company, Inc., and its subsidiaries, Warfield Natural Gas Company and Cabin Creek Gas Company, existing December 31, 1923.

Very truly yours,

FORD, BACON & DAVIS, INC.

REPORT.

VALUATION

UNITED FUEL GAS COMPANY

Incorporated

DECEMBER 31, 1923

Scope of Report

This report covers an inventory and examination, as of December 31, 1923, of the physical property of the United Fuel Gas Company, Inc. The inventory was prepared in part from the books of the Company and in part by actual count in the field. The examination of the property in the field, together with other exhaustive checks applied, provided a complete verification of the entire inventory and a basis for the determination of the amount of deterioration existing in the component parts of the units of physical property.

A complete description of the work is contained in the following paragraphs under the several major property headings.

Based upon the inventory, as verified, estimates have been made of the costs of reproduction new and less observed deterioration of the physical property as of December 31, 1923, using prices of labor and materials current in the territory served on or about that date.

In addition to the above referred to estimates, based upon the physical property, an estimate was made of the value of the leaseholds and natural gas rights held by the Company at the date of the valuation. For this purpose and as a basis the estimates of recoverable gas remaining in the proven and probably productive territory were used as reported upon by Mr. Ralph E. Davis. The leaseholds to which no gas content was assigned by Mr. Davis

were priced at present day cost of acquisition by the Company.

A description of the principle involved and the computations in detail are contained in the following paragraphs under the heading "Leaseholds and Natural Gas Rights".

No attempt has been made to verify the Company's legal title to any of the property included in the inventory, nor has there been any effort made to search for property which was not designated as owned by the Company.

In the statements appended to this report the priced inventory is summarized in accordance with "A Uniform Classification of Accounts for Natural Gas Utilities prescribed by The Public Service Commission of West Virginia." The details of the priced inventories going to make up the totals appearing in these summaries and statements are included in additional volumes forming an integral part of this report. These volumes are entitled respectively:

Inventory of Production System Property
Inventory of Transmission System Property
Inventory of Distribution System Property
Inventory of General Property

The property as it is physically located in West Virginia, Kentucky and Ohio is segregated in these inventories.

The properties of the Cabin Creek Gas Company in the Kanawha Field, West Virginia, and the properties of the Warfield Natural Gas Company in Kentucky, which are each owned entirely by the United Fuel Gas Company, are shown separately in the inventories. The total values have been included in the summaries as though the three were one company.

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Nature of Business and Territory Served

The United Fuel Gas Company, Inc., is engaged in the production, transportation and distribution of natural gas. Its production operations are carried on in what are known as the Spencer, Clendenin, Kanawha, and Triple State (Kermit) Fields. These fields are located generally in Jackson, Roane, Clay, Kanawha, and Mingo Counties in West Virginia, and Martin County in Kentucky.

It owns a few leaseholds, wells and pipe lines in the Counties of Wayne, Logan, Lincoln and Boone in West Virginia which are of minor importance since comparatively small quantities of gas are now procurable in these fields.

Gas from the several fields is transmitted for distribution in various towns in West Virginia in the territory extending from the producing fields in the most easterly counties to the western boundary of the State; also to towns along the northern and eastern border of Kentucky and the southern border of Ohio extending as far South as Williamson, W. Va., and as far North and West as Portsmouth, Ohio. The Company also supplies gas to the following companies in wholesale quantities.

Customer	Point of Delivery
Columbia Gas & Electric Co.	Ralls Gap, Calhoun County, W. Va.
Ohio Fuel Supply Co.	Ravenswood, Jackson County, W. Va. (at the Ohio River)
Hope Natural Gas Co.	Cedarville, Gilmer County, W. Va.
Pittsburgh & West Virginia Gas Co.	Cedarville, Gilmer County, W. Va.
Central Kentucky Natural Gas Co.	Inez, Martin County, Ky.
Louisville Gas and Electric Co.	Inez, Martin County, Ky.
Portsmouth Gas Company	Portsmouth, Ohio.

In addition to the above companies, several small distributing companies are supplied with gas at city gates.

The following is a list of the towns in which the Company distributes natural gas in its own distribution systems:

United Fuel Gas Company, Inc.

Towns Served

West Virginia

Amma	Fort Gay	Nitro
Bannister	Gandeeville	Ona
Barboursville	Gay	Poca
Big Creek	Greyeagle	Quick
Big Sandy	Hunt	Ravenswood
Blue Creek	Huntington (Part)	Reedy
Buff Lick	Hurricane	Rich Creek
Cedarville	Jordan Creek	Ripley
Cerrado	Kanawha City	Sandyville
Charleston	Kenova	Silverton
Chelyan	Kermit	Sissonville
Cherry Tree Bottom	King	South Charleston
Clendenin	Kyger	Spencer
Coalburg	Lock Seven	Stoffel
Culloden	Logan	Three Mile
Eastbank	McClanahan	Walgrove
East Lynn	Milliken	Walton
Elkview	Newton	Williamson

Kentucky

Ashland	Chinnville	Louisa
Buchanan	Greenup	Russell
Burnaugh	Himlerville	Warfield
Catlettsburg	Inez	Wolf Creek

Ohio

Bradrick	Corryville	Portsmouth (Part)
Chesapeake	Ironton	Proctorville
Coal Grove	New Boston	Wheelersburg

The following tabulations set forth the total quantities

of gas sold in the Company's distribution plants and at wholesale points for the years ended December 31, 1914, to December 31, 1923:

Statement of Gas Sold—Total M c. f.

Year	Total Gas Sold	Gas Sold in Company's Distribution Plants	Gas Sold Wholesale	Other Main Line Sales	Gas Sold in Field
1914	29,283,145	11,560,164	16,118,993	116,174	1,487,814
1915	29,594,673	11,517,109	17,217,227	179,079	681,258
1916	39,290,446	14,697,325	24,042,967	126,259	423,895
1917	60,610,866	17,546,384	41,217,295	918,127	929,060
1918	57,035,146	14,235,708	40,338,657	1,765,691	695,090
1919	52,186,998	13,091,485	36,328,136	1,558,245	1,209,132
1920	52,509,210	16,417,968	32,919,420	1,865,618	1,306,204
1921	42,669,113	12,220,505	28,836,523	565,067	1,047,018
1922	47,625,222	13,051,244	31,994,593	1,121,008	1,458,377
1923	47,040,235	14,127,617	30,066,171(A)	1,462,340	1,384,107

Note: (A) Companies—Columbia Gas & Electric Co., Ohio Fuel Supply Co., Hope Natural Gas Co., Pittsburgh & West Virginia Gas Co., Central Kentucky Natural Gas Co., Louisville Gas & Electric Co., Portsmouth Gas Co., Montgomery Gas Co., and sundry smaller companies.

Statement of Gas Sold—Distribution Plants by States

Gas Sold in Company Distribution Plants

Year	Total	W. Va.	Kentucky	Ohio
1914	11,560,164	5,080,153	2,564,830	3,915,181
1915	11,517,109	5,124,292	1,229,827	5,162,990
1916	14,697,325	6,493,895	1,490,506	6,712,924
1917	17,546,384	8,702,317	2,412,701	6,431,366
1918	14,235,708	9,851,204	1,976,815	2,407,689
1919	13,091,485	9,987,204	1,841,294	1,262,987
1920	16,417,968	11,454,063	2,300,789	2,663,116
1921	12,220,505	9,428,874	1,366,660	1,424,971
1922	13,051,244	9,288,725	1,569,993	2,192,526
1923	14,127,617	10,593,248	1,975,715	1,558,654

The Company purchases a portion of the gas which it sells from various independent producers located in the fields. The following table shows that the Company has purchased an average of 21.60 per cent of its sales during the ten year period ended December 31, 1923:

A Statement of Gas Produced, Purchased and Sold

Year Ended Dec. 31	Gas Produced (M. c. f.)	Gas Purchased (M. c. f.)	Total Sales (M. c. f.)
1914	21,047,162	8,235,983	29,283,145
1915	19,578,870	10,015,803	29,594,673
1916	28,904,224	10,386,222	39,290,446
1917	48,921,616	11,689,250	60,610,866
1918	45,985,640	11,049,506	57,035,146
1919	42,235,495	9,951,503	52,186,998
1920	43,734,217	8,774,993	52,509,210
1921	33,464,075	9,205,038	42,669,113
1922	37,721,087	9,904,135	47,625,222
1923	37,370,482	9,669,753	47,040,235

Description of Physical Property as Existing December 31, 1923

The United Fuel Gas Company controls by lease 814,911 acres of land for the production of natural gas. Based upon the report of Mr. Davis this acreage may be classified as follows:

Proven Productive	136,384 acres
Probably Productive	126,208 "
Unproven	552,319 "

The Company has a total of 789.7 productive wells located in the proven territory. This number of wells, segregated by major fields in which they are located, with average depths shown, is as follows:

Fields	Number of Productive Wells	Average Depth in Feet
Spencer	222.2	2,280
Clendenin	435.5	1,805
Kanawha	63	2,200
Triple State (Kermit):		
West Virginia	25	1,775
Kentucky	44	1,367

These wells are connected to a general system of field lines ranging in size from 2 in. to 20 in. and totaling approximately 583 miles in length. The pipe in the transmission system transporting the gas to the various points of delivery, both wholesale and for distribution, ranges in size from 2 in. to 20 in. and totals approximately 540 miles in length. The Company owns and operates 13 compressing stations with a total of 34,505 horsepower in this transmission system. The following table gives the name, location and horsepower capacity of these stations:

West Virginia

Name of Station	Location	(Horsepower) Capacity
Buff Lick	Kanawha County	3,305
Cobb	Kanawha County	8,460
Frozen Camp	Jackson County	90
Goad	Roane County	700
Kanawha	Kanawha County	6,790
Kermit	Mingo County	2,200
Mammoth—Sunday Creek	Kanawha County	960
Porter	Clay County	600
Spencer	Roane County	5,065
Walgrove	Kanawha County	5,065
Ward	Roane County	90
Total West Virginia		33,325

Kentucky

Name of Station	Location	(Horsepower) Capacity
Hale	Martin County	200
Walbridge	Lawrence County	980
Total Kentucky		1,180
Total		34,505

The Company has 531 miles of pipe lines in its several distribution plants, varying in size from 2 in. to 16 in. in diameter. There are approximately 45,000 meters installed in these plants and for the sale of gas to retail consumers throughout its system.

Measuring stations owned wholly by the Company or jointly with the purchasing company are located at the points at which the Company delivers gas to its wholesale customers. The larger of these stations are located at Balls Gap for the delivery of gas to the Columbia Gas & Electric Co.; at Ravenswood for the delivery of gas to the Ohio Fuel Supply Co., and at Cedarville for the delivery of gas to the Hope Natural Gas Co. and the Pittsburgh & West Virginia Gas Co.

The Company owns and operates an extensive system of telephone and telegraph lines, approximately 321 miles in length, which connects its offices with the various compression stations, measuring stations, and important points in the field.

The Company owns motor trucks and passenger automobiles which it uses principally in the distribution plants. It owns also draft horses, saddle horses, wagons and miscellaneous stable equipment which it uses in conducting field operations.

It has 14 drilling and 13 cleaning-out tool strings used in drilling new wells and maintaining existing wells in proper operating condition. Shops and warehouses are

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located at convenient points in the several fields and distribution plants.

The main office of the Company is located in Charleston, W. Va., where a three-story modern type office building is occupied. Field offices are located in the several fields, and a general office for the western division of the property is located at Huntington, W. Va.

A map, attached hereto, shows the location of the principal fields, transmission systems, compressing stations, measuring stations and distribution plants.

Summary of Valuation

Following is a condensed summary of the valuation of the physical property, including leaseholds and natural gas rights:

United Fuel Gas Company, Inc.

Condensed Summary of Valuation of Property as Existing December 31, 1923.

General Summary of All Property.

Classification	Estimated Cost of Reproduction December 31, 1923 New	Less Observed Deterioration
Production System	$49,023,964	$44,279,576
Transmission System	13,467,823	11,154,326
Distribution System	3,269,363	2,694,806
General Property	679,140	594,742
Total	$66,440,290	$58,723,450
General Overhead Charges	7,063,311	6,357,046
Working Capital, including material and supplies	990,000	990,000
Total	$74,493,601	$66,070,496

The above estimates do not include any allowances for going concern value, franchise value, earning power, consolidation or developmental value, losses from early operation, or similar intangible elements of value.

The fact that no amount has been included for going concern in particular does not imply that such value is non-existent. In the case of the United Fuel Gas Company, its favorable position in producing fields where it controls large blocks of gas producing leases not subject to competitive drilling or exhaustion, enables it to secure gas at comparative low costs, thus justifying an unusually large amount of going concern value. However, as this value cannot be arithmetically computed it has not been included as a part of this valuation of physical property.

Inventory and Prices

As stated in the earlier paragraphs of this report, the inventory was prepared in part by the Company's forces under instructions from and supervision by Ford, Bacon & Davis, Inc. In the case of the compressing station equipment and of the majority of structures, an actual physical inventory in the field was made by engineers of Ford, Bacon & Davis, Inc. The verification of the inventories covered approximately 65 per cent of the total valuation and warranted the acceptance of them as practically correct.

In compiling unit prices, the general practices of the Company as to construction procedure and organization of crews for the prosecution of the work were adhered to wherever possible. Rates of labor and prices of materials actually being paid by the Company were used as a basis in the computation of unit prices.

Land

The Company prepared from its deeds a list of the parcels of land owned in fee and held for use other than

the production of gas. The larger parcels on this list were appraised by local real estate appraisers as to their value as of December, 1923. These appraisals, together with the book cost of the parcels which were not appraised, form the basis of the account "Land" in the summaries. The smaller parcels which it was not considered necessary to appraise are used as regulator sites and their value is nominal. No attempt was made to search the title or otherwise prove the ownership of any parcel of land. No observed deterioration has been computed upon land values.

Rights of Way

The cost of the rights of way has been included at the amount shown to have been paid for it in the Company's records for the years 1911 to 1923. The rights of way expense has been computed by applying a factor to the yearly expenditure for this expense as shown by the books of the Company for the years 1911 to 1923. The factor was arrived at by the consideration of the increase in the salaries and expenses of the employees securing rights of way.

Buildings and Structures

An inventory was prepared by the Company, giving the general size and description of each building owned, except the buildings in the compressing station plants used to house the compressing station machinery, and the general office buildings in Charleston and Huntington. The field forces made an actual physical inventory of all the compressing station buildings and accessory structures and buildings located at the compressing stations; the general office buildings and shops in Charleston and Huntington, and the principal warehouse buildings and measuring station structures located throughout the system.

This actual inventory included many regulator houses, dwellings, and such miscellaneous structures located in the larger distribution plants.

The unit prices, using rates for labor and materials at the several locations in which the buildings are located, were built up for each type of construction. Where the Company possessed a number of buildings which could be classified as being similar in construction, the cost of a typical structure was computed and this price applied to all buildings in that class. Otherwise each building was priced in detail.

The structures seen were carefully examined for the determination of condition, and all structures of a similar type of construction which were not seen were given the same condition as the average condition of the number of that type which were examined.

Gas Wells

The inventory of producing wells was prepared from the Company's records and was checked against every available record in the Company's possession. The inventory and subsidiary data showed for each well the location, date of completion, depth, sand, drilling cost and material content and cost. One check of the inventory of wells was afforded by a comparison with the records compiled and verified in the field by Mr. Davis in the preparation of his report. The result of the several checks was to verify the records of producing wells which are included in the inventory.

The actual cost for drilling, labor, teaming, freight, rig charges, and miscellaneous costs were analyzed in detail for a group of representative wells drilled each year in each field from 1913 to 1923 inclusive. This group of wells included

5	Drilled	each	year	in	the	Clendenin Field
3	"	"	"	"	"	Spencer "
2	"	"	"	"	"	Kanawha "
2	"	"	"	"	"	Triple State (Kermit) Field

The unit cost per foot was arrived at for each well drilled each year and to the average cost per foot each year a factor was applied which brought that cost to a December, 1923, basis. This factor was obtained by analyzing each item of cost to show the labor rates for each occupation and to show the actual costs of materials which went into the construction of the rigs and into the cost of drilling the wells. The relation therefore of each of these basic costs or rates to the 1923 basic costs or rates was weighted in accordance with the value of each in the assembled cost per foot in arriving at the factor. A verification of the results obtained was furnished by the fact that they checked the prices charged by independent drilling contractors in each of the fields.

The material prices used in pricing the casing and tubing and shutting in equipment at each well were computed from actual quoted prices of representative manufacturers to cover large purchases.

An allowance of 10.4 per cent was made for dry holes, which percentage was determined from a study of the drilling operations of the Company extending over a period of more than 12 years.

The deteriorated condition of the wells was determined separately for the "Gas Well Construction" account and for the "Gas Well Equipment" account. With reference to the first it was taken as a reasonable assumption that the wells were in a condition of depletion as was indicated by the decline in rock pressure. Based upon the records of this decline as compiled by Mr. Davis it was found that the average rock pressure of active wells had de-

clined 54 per cent from the original to the latest measurement.

The "Gas Well Construction" account is therefore taken to be in a condition of 46 per cent of new cost.

With reference to the account "Gas Well Equipment", it was found from study of past operations that the Company recovered approximately 85 per cent of the equipment in the well, the recovered material being in about 80 per cent condition. An amount representing this loss in use was deducted from the estimated cost of reproduction new in arriving at the deteriorated value of the account. Weighting the conditions of the two accounts results in the deteriorated condition of the present wells of 52 per cent.

Field Lines

The inventory of field line equipment was prepared from the Company's books and checked in several ways. The engineering records in the form of maps compiled from surveys made at the time of installation or at some subsequent period for mapping purposes, were used as a basis and the inventory was found to agree in practically all cases. In the few cases where differences did exist, it was because some information going to the Engineering Department had not been as complete as that received by the Accounting Department. It is the Company's practice to issue a completion notice for each pipe line constructed or changed, copies of which go to the Engineering Department, which in turn forwards a copy, after the job has been checked, to the Accounting Department. The Accounting Department however, has the additional check afforded by its warehouse transfer which it must receive on every job.

Another check is found in the fact that each well is connected to the system by lines which take the gathering

system letter and the well number. These records were also found to be in agreement.

Additional check was furnished by the inspection for condition of the lines in place, which was actually made in the field and which disclosed no inaccuracies in the records.

The prices used in the accounts—Field Line Construction and Equipment—were built up to conform with conditions which actually exist as to employment of labor, hauling of materials, clearing of right of way, size of gang and organization used by the Company, and similar problems met in construction work of this kind. Labor rates paid by the Company are the bases in every instance and the material prices were obtained from actual quoted prices by representative concerns for purchases of pipe in large quantities.

From records of actual installation a percentage was developed to cover the cost of fittings installed in the lines.

A percentage representing the accrued deterioration of the lines was arrived at by actual observation of the pipe in place at points uncovered for the purpose.

Transmission Lines

The inventory of transmission lines was prepared from the records of the Company in the same manner as in the case of Field Lines and was subjected to similar checks through the engineering records and through field inspection. Approximately 32 miles of the larger lines were actually measured by chaining and the measurements made were found to compare exactly with the inventory maps of the Engineering Department made by survey at the time the line was laid or at a subsequent date when the lines were inventoried for map making purposes.

The cost of installation was built up to conform with

the actual practice of the Company as described under the heading, Field Lines.

The prices of materials were obtained from the actual quoted prices by representative manufacturers for purchases in large quantities. The percentage of fittings was developed from a study of the fittings installed in the lines as obtained from the records of the Company. A percentage representing the observed deterioration was arrived at from the actual inspection of pipe in place. This inspection covered every section of the system and is considered representative of all the lines in the Transmission System.

Distribution Lines.

The inventory of distribution lines was prepared in the same general manner as was described under the heading of field lines and transmission lines. In this case, however, it was set up by Distribution Plants.

The unit prices of labor and materials were developed in the same manner as has been described for field and transmission lines. The allowance for fittings in place was determined from the study of the Company's records of fittings installed in distribution plants.

The deterioration was determined in the same manner as for transmission and distribution lines, i. e., from actual observation of pipe in place at points uncovered for the purpose of the inspection.

Lines in General

With reference to pipe lines in general it has been considered that all pipe is steel pipe. It is known that undoubtedly some of the older pipe is wrought iron, as it has been in service for a great many years. However, the records are not clear enough to permit an accurate determination of how much of the pipe is wrought iron and

how much is steel. For this reason it has all been considered steel pipe.

All of the lines are considered as trenched and as having been laid under large gang conditions, due consideration being given to the variations in construction and hauling conditions in the several systems going to make up the property.

Compressing Station Equipment

Detailed inventories were made by engineers of Ford, Bacon & Davis, Inc., of each of the compressing stations owned by the Company. Unit prices applicable to the units of the equipment such as gas compressors, air compressors, motors, pumps, and generators were obtained from the various manufacturers. The installation costs, including haulage and installation of the compressing units, foundation work and pipe installation were developed from time studies and similar data peculiar to the construction of each station as obtained from the Company's field forces and from records in its possession.

A careful inspection was made of each engine in operation. This, together with a review of all the records of past operation of the engines and of the records pertaining to maintenance and general upkeep of the units, formed the basis for the derivation of a percentage which represents the observed deterioration of the equipment in place. This percentage was determined separately for the major units, auxiliary equipment, pipe and fittings, and miscellaneous equipment.

Measuring Station Equipment

The Company prepared an inventory of the measuring station equipment such as orifice meters and Pitot tubes through which it measures gas sold and purchased. Several of these larger installations were inspected in place

and a detailed inventory made. Based upon these field inventories and upon analysis of the book costs of a large number of installations, several unit prices were developed which covered the groups into which it was possible to place the various meters shown in the inventories. The prices for meters were obtained from the manufacturers of the equipment and labor prices are those current in the location where installed.

The inspection of the installations in place was the basis for determining a percentage which represents the accrued deterioration of the equipment.

Meters and Services

Inventories of meters and services were prepared from the books and records of the Company as of December 31, 1923. Due to practical limitations no field verification of these inventories was made. They were, however, carefully investigated and checked by comparison with the number of consumers.

The prices were obtained from the manufacturers of the different types of meters, and the cost of installation of the meters and services were developed from actual performances and analyses of a large number of recent installations made by the Company.

The percentage representing the deterioration existing was determined from the records of the Company as to meter replacements and maintenance.

Drilling and Cleaning Equipment

The inventory of well drilling and cleaning equipment was prepared from the Company's books and verified by field inspection of several of the strings of tools.

The unit prices were obtained from local dealers in West Virginia.

The deteriorated condition was determined from the in-

spection of the equipment in the field and from the nature and use to which the equipment is adapted.

Telephone and Telegraph Equipment

The inventory of telephone and telegraph equipment was prepared from the Company's records in considerable detail by lines. These various lines were checked up in every manner available principally through comparison with Engineering Department records, with records of employes in the Pressure Department and by actual field inspection and count of certain sections.

The prices of materials were obtained from manufacturers. The installation costs were determined from actual conditions and by using actual rates for labor prevailing in the territory in which the lines are located. From the inspection of the lines in place a percentage representing the accrued deterioration was determined.

General Equipment

This group includes shop equipment, office equipment, garage equipment, stable equipment, general tools and implements. The Company prepared inventories of each of these accounts which were in turn verified by field inspection. The unit prices were obtained from representative manufacturers for each item. From the field inspection a percentage was arrived at representing the observed deterioration of the equipment.

Direct Overheads

In building up unit prices for the installation of pipe lines, compressing stations, meters and, in fact, in the acquisition of all materials, an allowance was made to cover certain direct overheads which are part of the direct cost of the property in place.

Based upon labor in all installations, an allowance was made for liability insurance at 1 per cent, loss and use of tools from 1 ½ to 2 per cent, field supervision from ½ of 1 per cent in the case of miscellaneous structures to 8 per cent in the installation of compressing station equipment, timekeeping at 1 per cent on pipe lines and miscellaneous structures, and contingencies from 2 per cent in the case of compressing stations and the smaller miscellaneous accounts to 4 and 5 per cent in the case of gathering, transmission and distribution lines.

On materials, these direct overheads are ½ of 1 per cent for purchasing, from ½ to 4 per cent for warehouse handling and from 2 to 5 per cent for contingencies.

A fee or contractor's profit of 10 per cent was allowed on the cost of all buildings and structures. The contingencies cover unforeseen costs in construction and such other costs as are not apparent in completed construction.

These percentage allowances were determined from a study of the records of the Company in actual installations and from similar experience of other companies.

General Overheads

General overhead charges on construction are classified as engineering and superintendence, administration expense during construction, interest during construction, preconstruction costs, legal expenses during construction, insurance and taxes during construction and the cost of financing. These overhead charges are unavoidable in the construction of a property and are as directly a part of its cost as are materials and construction labor. The following tabulation shows the construction overheads which have been estimated to apply in the construction of this property:

	Production System	Transmission System	Distribution System	General Property
Engineering and Superintendence	2 1/2%	7%	3%	3%
Administration	2	2	2	2
Interest	8	8	8	8
Preconstruction Costs	2 1/2	2 1/2	2 1/2	2 1/2
Legal Expenses	1 1/2	1 1/2	1 1/2	1 1/2
Insurance and Taxes	1	1	1	1
Cost of Financing	4	4	4	4
Total	21 1/2%	26%	22%	22%

Engineering work during construction may be conducted by a department organized for this purpose or by the employment of an established engineering organization, the cost for comparable results being about the same. Included in this expense are the cost of preparation of specifications, the review of bids for construction, checking contractors' estimates, geological work, general supervision of construction, laying out of the lines, and mapping of the system. All of this would extend over a construction period of not less than two years during which entire period this expense would be incurred.

The construction of a property of this size, involving a large expenditure of money in a period of two years' time, would require the organization of a comprehensive administrative force. This organization would form the nucleus of the permanent operating force but during the construction period the greater part of its time would be devoted to the construction operations.

Interest during construction has been allowed at the current rate of 8 per cent per annum. The money would be required on an expense basis for a period representing at least one-half of the construction period of two years. This rate of interest is taken as being the current rate at

this time at which such a large sum of money could be readily acquired.

Preconstruction costs are those necessary for the development or promotion of the enterprise and include service and expense of organizers and promoters, preliminary surveys and reports, charter expenses, legal and technical expenses pertaining to the advisability of the proposition and its creation as a corporate entity, all incurred prior to the starting of construction; the preparation of prospectuses and interest on these expenditures during a preconstruction period.

Legal expenses during construction include such items as fees and expenses of general counsel and local attorneys in the various localities in which the utility renders service. It includes office expenses of such attorneys, the cost of printing briefs, legal forms, testimony, reports, establishment of rates, witness fees, notarial fees, registration fees and miscellaneous expenses such as traveling.

Insurance and taxes during construction include fire insurance, public liability, damages in excess of liability insurance, and property taxes.

The cost of financing includes the expense involved in assembling the necessary capital for the enterprise and must not be confused with bond discount which has not been considered in the estimates. This expense is that which would be incurred in the floating of securities and as the interest rate provides for the current market return upon the investment there is no discount to be considered.

In the matter of deterioration, some part of the general overheads would undoubtedly deteriorate in proportion to the deterioration in the physical property. For instance, while a great deal of the engineering and supervision done during construction would not be required in making replacements to any considerable extent, there is a certain

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part of it which must be repeated every time a material change is made in the layout of the plant from any cause whatsoever. It is therefore estimated that deterioration will occur in the general overheads allowed for engineering at the rates of ½ of 1 per cent in the production system, 2 per cent in the transmission system, 3 per cent in the distribution and 2 per cent in the general property.

As interest is an ever-continuing expense, it may be said to deteriorate as the property deteriorates. As the replacement of the property involves the expenditure of additional funds the interest charges are repeated, therefore all of the interest in each system is considered to deteriorate in proportion as the physical property deteriorates. No deterioration has been computed on the balance of the overhead construction costs, as it is considered that these costs once incurred would not again be necessary.

Working Capital

Working capital as shown in the estimates includes the amount shown on the Company's books for materials and supplies on hand at December 31, 1923, a reasonable allowance for cash in the bank, together with two months' average operating expenses based upon the year ended December 31, 1923. No other allowance has been made to cover stock of gas in lines and meters.

LEASEHOLDS AND NATURAL GAS RIGHTS.

Leaseholds and natural gas rights, proven and probable, have been included in the valuation at an amount computed as the value of the estimated remaining gas content of the proven and probable acreage.

Principle

The principle involved may be stated as follows:

> The measure of the value to the owner or lessee of gas in the ground is the difference between the prevailing market price at which such owner or lessee can purchase gas delivered to the field mains and the cost to such owner or lessee of producing and maintaining with his own wells an equivalent supply of gas at the same point of delivery.

In applying this principle it is necessary to arrive at:

(a) The total cost to the owner or lessee of producing and maintaining with his own wells and equipment an equivalent supply of gas corresponding in delivery conditions to those under which the gas is purchased. This total cost must include operating expenses and depreciation, amortization of the value of the equipment used and a fair return upon the investment in such equipment.

(b) The prevailing market price at which gas can be purchased as controlled by delivery conditions.

(c) The estimated recoverable content of the proven and probably productive acreage.

Prevailing Market Prices

In arriving at a result from the application of the above principle, computations were based upon several different market prices for gas, as explained in the following sections. In general these prices are either actually being paid for gas delivered in the field contiguous to wells and lines of United Fuel Gas Company, Inc., under varying conditions, or are the result of opinions expressed as to what this gas would sell for delivered for industrial purposes. In the following list of market prices only those calling for the delivery of gas by United Fuel Gas Com-

pany, Inc., at Cedarville, W. Va., and the delivery of gas to United Fuel Gas Company, Inc., by Falling Rock Cannel Coal Company in West Virginia, concern the United Fuel Gas Company.

It might be well to call attention to the fact that the price at which the United Fuel Gas Company purchases gas is not based primarily upon the rate at which it sells gas. The Company has the choice of either purchasing part of its supply in the field at the best price it can make, or of obtaining such additional supply from its own wells which would necessitate additional investment. Its decision is based upon which source is the most economical in point of cost and conservation of its supply.

	Contract Prices
Gas purchased by Owens Bottle Works, Charleston, W. Va., delivered in field	$0.10
Gas purchased by International Nickel Co., Huntington, W. Va., delivered in field	0.17
Gas delivered to Industrial Corporations at Pittsburgh	0.30
Gas purchased by South Penn Oil Co., delivered in the field	0.08
Gas delivered to Hope Natural Gas Co., and Pittsburgh and West Virginia Gas Co., at Cedarville, W. Va., by United Fuel Gas Co.	0.2266
Gas delivered in the field by Falling Rock Cannel Coal Co., W. Va., to United Fuel Gas Company	0.085

Owens Bottle Works

This company purchases gas in the field for use in its industrial plants at a general market price of $0.10 per m. c. f. The cost to the United Fuel Gas Company of maintaining an equivalent supply with its own wells and equipment would be $0.05431 per m. c. f., leaving a net difference of $0.04569 as the value of gas in the ground.

The detail computation of the above cost is shown in the following section:

Operating Cost to Owner of Maintaining Supply at Similar Delivery Point

The Company's records have been taken as the base for the expenses involved on this account. These items are, for the year ended December 31, 1923:

(a) Operating Wells and Field Lines less gas used in own operation.
(b) Production Tools and Supplies.
(c) Repairs to Wells.
(d) Repairs to Lines.
(e) Well Royalties.

To the total of the above has been added the general administration and Company operating overheads in the same proportion as these general expenses are chargeable to the production system expenses in the Company accounts.

The calculations involved in the foregoing paragraphs are set forth in the following tabulation:

Operating Wells and Field Lines	$114,104
Production Tools and Supplies	9,651
Repairs to Wells	121,406
Repairs to Field Lines	24,147
Well Royalties	192,247
Total	$461,555
Less Gas Used in Own Operations	$ 5,295
Total Direct Expenses	$456,260
Proportion of General Expenses	195,006
Total Expenses	$651,266

Expenses per m. c. f. (obtained by dividing total expenses by production of 37,370,482 m. c. f.)	$0.01743
Return on deteriorated value of wells and well lines at 8%, as shown by valuation of Dec. 31, 1923, divided by production	0.01388
Total Cost	$0.03131

To the foregoing total of expenses must be added a depletion charge which will provide for the recovery of the depletable value of a well unit based upon the present investment in wells. The reason for this is that the contracts for the purchase of gas generally call for the delivery of present production and do not take into account the delivery of a large quantity of gas similar to that which it is estimated remains in the territory controlled by the United Fuel Gas Company, Inc.

Depletion Charge per M. c. f.

The total sum per well unit is arrived at by taking:

(a) The estimated cost of reproduction of the well exclusive of the value of the material content recoverable and including construction overheads as applied to Production System Property, excepting interest. The material content recovered has been estimated at 85%, recovered in 80 per cent condition.

(b) The estimated cost of reproduction of well lines exclusive of materials recovered. This item includes the cost of laying 1,490 feet of line, which is the average required per well, the cost of recovering this number of feet of line, and the cost of the pipe lost in use which is equivalent to 33 per cent of the total pipe.

(c) The estimated cost of abandoning a well. This cost was arrived at from a study of the records and a review of the requirements prescribed for the abandonment of a gas well.

The sum of these charges is the cost of the depletable value of a well unit.

The computations as outlined above are shown in the following tabulation:

Estimated Depletable Value of Well Unit

Wells:		
Productive (excluding material content recoverable)	$8,704	
Overheads (excluding interest)	1,175	$ 9,879
Lines:		
Labor Laying	390	
Labor Recovering	390	
Materials Totally Lost in Use	259	1,039
Cost of Abandoning Well		1,000
Total Depletable Value of a Well Unit		$11,918

As the present wells were found to be still capable of producing 46 per cent of the original volume, it is this percentage of the depletable value of a well unit which must be provided for in the recovering of the estimated remaining recoverable content of the well.

The remaining recoverable content per well is estimated to be 238,360 m. c. f. (see below), which quantity divided into the above amount to be recovered results in a depletion charge of $0.023 per m. c. f.

The total estimated recoverable content of the proven and probable acreage, taken from the report of Mr. Davis, to which reference has been made, is 663,108,431 m. c. f. This gas is estimated to be contained in 262,592 acres or an average content per acre of 2,525 m. c. f. It was found from a study of the Company's records that each well, at present productive, carries an equivalent of 94.4 acres, which makes the content per well to be 238,360 m. c. f.

In summary the operating cost to owner of maintaining supply at similar delivery point is as follows:

Operating Cost per m. c. f.	$0.03131
Depletion Rate per m. c. f.	0.02300
Total Cost to Lessee or Owner per m. c. f.	$0.05431

International Nickel Company

This company has recently made a contract for the delivery of gas to its industrial plant, in Huntington, W. Va., at the rate of $0.20 per m. c. f. The company making the delivery computes its expense for delivering the gas from the gathering point in the field to Huntington, W. Va., to be $0.03 per m. c. f. This distance is approximately 12 miles. The expense includes operating cost, amortization and return upon the transmission investment necessary and the rate per M. c. f. is based upon the quantity to be delivered daily as called for in the contract. Deducting this transmission expense would fix $0.17 as the price at which delivery is made at a gathering point in the field. The cost to the United Fuel Gas Company of maintaining an equivalent supply with its own wells and equipment would be $0.05431, leaving a net difference of $0.11569 per m. c. f. as the value of gas in the ground. The detail computation of the amount deducted as United Fuel Gas Company expense is the same as that shown under the above heading "Owens Bottle Works".

Delivery to Industrial Corporations at Pittsburgh

A rate of $0.30 per m. c. f. has been assumed as the price at which gas could be sold in the industrial market in Pittsburgh. The fixing of this rate is based upon intimate knowledge of the value of natural gas for industrial purposes. It also compares favorably with the cost of hot producer gas. Also creditable information has been

obtained regarding statements made by Mr. S. W. Meals, President and General Manager of the Carnegie Natural Gas Company, to the effect that the United States Steel Corporation and other large steel corporations would readily pay at least this price for a large quantity of natural gas delivered uniformly throughout the year.

Cost of Delivering Gas for Industrial Use in Pittsburgh, Pa.

The cost to the United Fuel Gas Company of the gas sold at wholesale delivery points on its system is $0.17552 per m. c. f. (See following tabulation.) To this cost must be added the expense of operation, amortization and return upon the investment in the plant necessary to transmit the gas from the best available point (Cedarville) in the Company's present system, to Pittsburgh. The total quantity which the Company could be expected to deliver at a uniform rate throughout the year would approximate 46,000,000 m. c. f., or from 125 million to 150 million per day. To transmit this gas from Cedarville to Pittsburgh would require 2-20 in. lines each about 130 miles long and two compressing stations each of 9,000 h. p. capacity. The cost of operating this system, based upon United Fuel Gas Company actual costs and including allowances for amortization of and return upon the investment at 8 per cent, would be $0.0526 per m. c. f. This amount added to the total cost at Cedarville results in a total cost at Pittsburgh of $0.22812 per m. c. f., leaving a difference of $0.07188 as the value per m. c. f. of gas in the ground. The following tabulations give details of the above computations:

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Estimate of Transmission Property which would be required to transmit approximately 46,000,000 M. c. f. of Natural Gas per year from Cedarville, W. Va., to Pittsburgh, Pa.

2 - 20 in. Lines at 130 miles each totals 260 miles. 260 miles of 20 in. pipe line, including rights of way	$ 6,904,894
2 - 9,000 h. p. Compressing Stations	1,629,000
Total Physical Property	$ 8,533,894
Construction Overheads	2,218,812
Total Estimated Cost of Property	$10,752,706

Cost of Delivering Gas for Industrial Use in Pittsburgh, Pa.

	Per M. c. f.
Return on above total at 8%, $860,216 Divided by Sales of 46,000,000 M. c. f.	$0.01870
Amortization of approximately $10,000,000 of above value over 663,108,431 M. c. f. of gas	0.01510
Operating Cost (based upon United Fuel Gas Co. experience)	0.01270
Annual Depreciation Charge at 3%, $281,410 Divided by sales of 46,000,000 M. c. f.	0.00610
Total Cost Cedarville to Pittsburgh	$0.05260
United Fuel Gas Co. cost of delivery at Cedarville (see below)	0.17552
Total Cost Gas Delivered at Pittsburgh	$0.22812
Value at Pittsburgh for industrial use	0.30000
Net Difference as value of gas in the ground	$0.07188

Total Cost to United Fuel Gas Company of Delivering Gas at Cedarville, W. Va., in Wholesale Quantities, excluding Value and Amortization of Leaseholds and Natural Gas Rights.

Expenses:		
Production	$0.05005	
Transmission	0.01270	$0.06275
Depreciation:		
Production (No depletable property included)	$0.00425	
Transmission	0.01246	
General	0.00043	0.01714
Return on Investment (Estimated Cost of Reproduction New Less Observed Deterioration):		
Production (excluding Leaseholds and Natural Gas Rights)	$0.01722	
Transmission	0.02294	
General	0.00093	
Working Capital	0.00145	0.04254
Amortization of Physical Property (Deteriorated Value):		
Production (No depletable property included)	$0.00396	
Transmission	0.01518	
General Plant	0.00032	0.01946
Depletion:		0.03363
Total Cost of Gas Delivered at Cedarville, exclusive of Leaseholds and Natural Gas Rights		$0.17552 (A)

Note.—(A) Source of information on which this total cost is based is described in the following section.

Cost of Delivering Gas at Cedarville

The amounts included in the foregoing statements of cost for expenses are taken from the financial records of the Company for year 1923 and include the operating expenses, the cost of gas purchased and proportion of general administration expenses and taxes chargeable to the production and transmission systems.

The charges for depreciation are determined by applying varying percentage rates to each class of property, using as a basis the estimated cost of reproduction new of the property as of December 31, 1923. In no case is depreciation computed upon property which has been considered depletable.

The return on investment is computed at 8 per cent upon the estimated cost of reproduction new less observed deterioration at December 31, 1923. Each of the units under headings "Expenses", "Depreciation" and "Return on Investment" are obtained by dividing the total amounts by the quantity of gas handled during the year 1923.

Amortization is computed upon the value of the physical property which it will not be possible to salvage at the end of its useful service life. Generally, the amortizable value has been arrived at by deducting from the estimated cost to reproduce less observed deterioration, 10 per cent of the deteriorated value of the physical property only. The unit is arrived at by dividing the total sum to be amortized by the estimated recoverable gas in the ground.

Depletion Charge per M. c. f.

The depletion charge shown in the above tabulation is determined in much the same manner as is described under the heading Owens Bottle Works. This charge must be sufficient to provide for the recovery of the value of the property required to produce and deliver in the field the

quantity of gas which it is estimated remains in the ground. This determination involves the total value of the present equipment which will be used for this purpose and the amount of additional equipment which it will be necessary to install in order to produce the full amount of gas. The depletable value per well unit is arrived at by taking:

(a) The estimated cost of reproduction of the wells exclusive of the value of the material content recoverable and including construction overheads as applied to production system property, excepting interest.

(b) The estimated cost of reproduction of well lines necessary to the service of each well, exclusive of materials recovered.

(c) The estimated cost of abandoning wells at exhaustion.

This computation uses the same depletable value of a well unit of $11,918, as detailed in the section headed "Owen Bottle Works".

With reference to the present wells, inasmuch as they were found to be still capable of producing 46 per cent of their original volume, the total depletable value per well is taken as that percentage of the above total of $11,918.

The estimate of the additional number of well units in which the Company will have to invest and deplete in order to recover the remaining gas is taken as the number of additional locations indicated by dividing the estimated remaining recoverable content per well (238,360 m. c. f.) into the total estimated recoverable content in Mr. Davis' report (663,108,431 m. c. f.). This calculation results in a total number of locations of 2,782, of which 789.7 are occupied by present active wells, leaving a total yet to drill of 1,992.3.

It is to this number of locations that the estimated depletable value of a well unit is applied in arriving at the total depletable value of the additional investment necessary to produce the full quantity of gas which it is estimated remains.

Tabulated, the above results in the following:

Present wells—789.7 @ 46 per cent of $11,918	$ 4,329,356.52
Additional wells—1,992.3 @ $11,918	23,744,231.40
Total Depletable Value of Wells	$28,073,587.92
This total divided by the remaining content per well results in a depletion unit of	$0.04234 per M.c.f.

The rate of $0.03363, used in the tabulation of total cost, is arrived at by determining the amount of annual depletion accrued by the quantity of gas produced and dividing this total by the total sales of the Company.

South Penn Oil Company

This company, which is in no sense a public utility company, purchases gas delivered to its mains in the field at a rate of $0.08, this rate being the general market price which the South Penn Oil Company is at present quoting for the purchase of gas. Advice has been received that this company has made recent contracts at a price of $0.12 per m. c. f. for gas delivered in the field and from which the gasoline has been extracted. This goes to show that the price of $0.08, while being the quoted market price, is not the limit at which the Company will make contracts. The cost to the United Fuel Gas Company of the delivery of a corresponding amount under similar conditions would be $0.05431 per m. c. f.,

leaving a net difference of $0.02569 per m. c. f., as the value of gas in the ground.

The detail computation of the above item of cost is shown in the preceding section under the heading "Owens Bottle Works".

Delivery to Purchaser at Cedarville

The rate of $0.2266 which is used in this computation as the sales price at Cedarville is the average rate which was received for gas delivered by the United Fuel Gas Company at Cedarville to the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company during the period August, 1923, to April, 1924. The cost to the Company of delivering this gas at Cedarville is computed to be $0.17552, which leaves a difference of $0.05108 as the value of the gas in the ground. The detail computation of cost at Cedarville is shown in the foregoing section referring to cost of delivering gas in Pittsburgh.

Falling Rock Cannel Coal Company

The United Fuel Gas Company has entered into a contract with the Falling Rock Cannel Coal Company for the purchase from it of a large quantity of natural gas, from which the gasoline has been removed at $0.085 per m. c. f. delivered at a central point in the field. In fixing upon this rate as one of the several market prices, all of the various gas purchase contracts entered into recently by the United Fuel Gas Company with independent producers, were scrutinized. In many cases it was found that the price was affected by the position of the producer in the field and his relation to a general market. In other cases it was found that special prices were granted for concessions other than merely the delivery of gas. Eliminating all such contracts from consideration it was

found that the one with the Falling Rock Cannel Coal Company, of Kanawha County, W. Va., was the best example of the present market price at which the United Fuel Gas Company could purchase gas in reasonably large quantities in the field served by its system. The Falling Rock Cannel Coal Company at the time it made the contract was in a position to command the price at which it was willing to sell gas, inasmuch as it had a competitive market in which to deal. In other words, this contract was one made between a willing seller and a willing buyer and was not influenced by restrictions as to market or supply which affected the other contracts.

The cost to the United Fuel Gas Company of maintaining a similar supply with its own wells and equipment is $0.05431 per m. c. f., leaving a net difference of $0.03069 per m. c. f. as the value of gas in the ground, exclusive of any value of gasoline content.

The detail computation of the United Fuel Gas Company cost is similar to that shown under foregoing heading "Owens Bottle Works".

Conclusion

Summarized, the foregoing results are as follows:

	Contract Rate	Value per M.c.f. Gas in Ground
Purchase in field by Owens Bottle Works	$0.10	$0.04569
Purchase in field by International Nickel Co.	0.17	0.11569
Delivery at Pittsburgh	0.30	0.07188
Purchase in field by South Penn Oil Co.	0.08	0.02569
Delivery at Cedarville by United Fuel Gas Co.	0.2266	0.05108
Purchase of "Dry" Gas in field by United Fuel Gas Co.	0.085	0.03069

Based upon a review of these results and considering the varying circumstances surrounding the making of each contract, as well as the fact that most of the prices are for gas from which the gasoline has been extracted, it has been assumed that a fair and reasonable value of gas in the ground is not less than $0.05 per m. c. f. For the purpose of the computation of value of Leaseholds and Natural Gas Rights, exclusive of any value of gasoline content, in this report, the value of $0.05 per m. c. f. has been used.

Estimated Recoverable Content of the Proven and Probably Productive Acreage

The total estimated recoverable content of the proven and probable acreage as taken from the report of Mr. Davis, is 663,108,431 m. c. f. It is to this quantity of recoverable gas that the value of $0.05 per m. c. f. is applied, resulting in a total value of proven and probable acreage of $33,155,421.55.

Valuation of Unproven Acreage

The total acreage in this classification is taken from Mr. Davis' report. The value at which it has been included herein is the average bonus or investment charge per acre incurred by the Company in the year 1923 in the acquisition of the unproven acreage which it acquired during that year. This is taken as the measure of the value of this acreage as it represents bona fide transactions in the acquisition of such leaseholds.

The number of acres in this class is 552,319 and the cost of acquisition per acre in 1923 was found to be $5.9635, making a total value of unoperated acreage of $3,293,754.

SUMMARY OF VALUATION

By States and Systems

Estimated Cost of Reproduction as of December 31, 1923

Classification	Total		West Virginia		Kentucky		Ohio	
	New	Less Deterioration	New	Less Deterioration	New	Less Deterioration	New	Less Deterioration
Production System	$49,023,964	$44,279,576	$44,136,361	$39,635,170	$ 4,887,603	$ 4,644,406	$	$
Transmission System	13,467,823	11,154,326	11,413,264	9,446,663	1,690,852	1,404,257	363,707	303,406
Distribution System	3,269,363	2,694,806	2,325,319	1,915,322	509,545	421,012	434,499	358,472
General Property	679,140	594,742	644,021	566,293	29,550	24,076	5,569	4,373
Total	$66,440,290	$58,723,450	$58,518,965	$51,563,448	$ 7,117,550	$ 6,493,751	$ 803,775	$ 666,251
General Overhead Charges	7,063,311	6,357,046	6,149,797	5,517,663	722,224	662,606	191,290	176,777
Total	$73,503,601	$65,080,496	$64,668,762	$57,081,111	$ 7,839,774	$ 7,156,357	$ 995,065	$ 843,028
Working Capital	990,000	990,000						
Total	$74,493,601	$66,070,496						

By States and Accounts

Estimated Cost of Reproduction as of December 31, 1923

Acct. No.	Description	Total New	Total Less Deterioration	West Virginia New	West Virginia Less Deterioration	Kentucky New	Kentucky Less Deterioration	Ohio New	Ohio Less Deterioration
	Production System Properties								
204	Land								
205	Leaseholds								
207	Natural Gas Rights	$36,449,176	$36,449,176	$32,326,537	$32,326,537	$ 4,122,639	$ 4,122,639	$---------	$---------
206	Rights of Way	111,454	111,454	101,980	101,980	9,474	9,474	---------	---------
208	Gas Well Structures	59,360	44,520	59,360	44,520	---------	---------	---------	---------
209	Field Measuring Station Structures	4,919	4,379	4,702	4,196	217	183	---------	---------
210	Other Production System Structures	111,759	90,931	108,113	88,067	3,646	2,864	---------	---------
211	Gas Well Construction	5,869,386	2,699,917	5,631,849	2,590,650	237,537	109,267	---------	---------
212	Gas Well Equipment	2,156,587	1,470,733	2,061,807	1,406,045	94,780	64,688	---------	---------
213	Field Line Construction	1,244,603	995,682	1,114,395	891,516	130,208	104,166	---------	---------
214	Field Line Equipment	2,658,379	2,126,703	2,383,189	1,906,551	275,190	220,152	---------	---------
215	Field Measuring Station Equipment	40,637	34,541	39,232	33,347	1,405	1,194	---------	---------
216	Drilling and Cleaning Equipment	204,030	142,822	195,908	137,136	8,122	5,686	---------	---------
217	Other Production System Equipment	33,035	28,079	31,090	26,426	1,945	1,653	---------	---------
	Total Prod. System Properties	$48,943,325	$44,198,937	$44,058,162	$39,556,971	$ 4,885,163	$ 4,641,966	$---------	$---------
	Incomplete Construction	80,639	80,639	78,199	78,199	2,440	2,440	---------	---------
		$49,023,964	$44,279,576	$44,136,361	$39,635,170	$ 4,887,603	$ 4,644,406	$---------	$---------
	General Overhead Charges	2,700,792	2,297,519	2,536,562	2,153,961	164,230	143,558	---------	---------
	Total	$51,724,756	$46,577,095	$46,672,923	$41,789,131	$ 5,051,833	$ 4,787,964	$---------	$---------
	Transmission System Properties								
218	Land	$ 3,533	$ 3,533	$ 3,383	$ 3,383	$ 150	$ 150	$---------	$---------
219	Leaseholds	---------	---------	---------	---------	---------	---------	---------	---------
220	Rights of Way	159,713	159,713	120,583	120,583	30,505	30,505	8,625	8,625
221	Compressing Station Structures	271,494	230,182	251,684	214,019	19,810	16,163	---------	---------
222	Transmission System Meas. Sta. Str.	3,176	2,749	2,160	1,928	720	584	296	237
223	Other Trans. System Structures	212,611	187,895	198,087	175,004	12,096	10,895	2,428	1,996
224	Compressing Station Equipment	3,241,759	2,622,010	3,125,628	2,530,772	116,131	91,238	---------	---------
225	Trans. System Mens. Sta. Equip.	23,081	19,619	19,427	16,513	2,449	2,082	1,205	1,024
226	Transmission System Equipment	9,520,856	7,902,310	7,670,452	6,366,475	1,502,587	1,247,147	347,817	288,688
227	Other Transmission System Equip.	35,235	29,950	25,823	21,949	6,076	5,165	3,336	2,836
	Total Trans. System Properties	$13,471,458	$11,157,961	$11,417,227	$ 9,450,626	$ 1,690,524	$ 1,403,929	$ 363,707	$ 303,406
	Incomplete Construction	3,635	3,635	3,363	3,363	328	328	---------	---------
		$13,467,823	$11,154,326	$11,413,264	$ 9,446,643	$ 1,690,852	$ 1,404,257	$ 363,707	$ 303,406
	General Overhead Charges	3,501,388	3,270,038	2,967,212	2,770,532	439,612	410,952	94,564	88,534
	Total	$16,969,211	$14,424,364	$14,380,476	$12,217,215	$ 2,130,464	$ 1,815,209	$ 458,271	$ 391,940

By States and Accounts

Estimated Cost of Reproduction as of December 31, 1923

Acct. No.	Description	Total New	Total Less Deterioration	West Virginia New	West Virginia Less Deterioration	Kentucky New	Kentucky Less Deterioration	Ohio New	Ohio Less Deterioration
	Distribution System Property								
228	Land	$ 45,161	$ 45,161	$ 38,992	$ 38,992	$ 3,186	$ 3,186	$ 2,983	$ 2,983
229	Leaseholds								
230	Rights of Way	4,891	4,891	3,595	3,595	538	538	758	758
231	District Regulator Structures	34,962	28,961	23,326	19,022	6,294	5,482	5,342	4,457
232	Other Distribution Structures	39,634	31,146	29,903	23,424	6,237	4,978	3,494	2,744
233	Gas Receivers and District Regulators	69,499	59,074	49,882	42,400	11,037	9,381	8,580	7,293
234	Distribution Line Equipment	1,768,976	1,415,181	1,295,803	1,036,643	250,771	200,617	222,402	177,921
235	Service Line Equipment	547,023	464,969	385,410	327,599	90,530	76,950	71,083	60,420
236	Meters	532,492	452,618	354,369	301,213	96,795	82,276	81,328	69,129
237	Meter Installations	209,853	178,286	133,325	113,237	40,907	34,771	35,621	30,278
238	House Regulators								
239	Other Distribution System Equipment	15,691	13,338	10,113	8,596	2,781	2,364	2,797	2,378
	Total Distribution System Equip.	$ 3,268,182	$ 2,693,625	$ 2,324,718	$ 1,914,721	$ 509,076	$ 420,543	$ 434,388	$ 358,361
	Incomplete Construction	1,181	1,181	601	601	469	469	111	111
		$ 3,269,363	$ 2,694,806	$ 2,325,319	$ 1,915,322	$ 509,545	$ 421,012	$ 434,499	$ 358,472
	General Overhead Charges	717,905	654,703	510,400	465,300	112,004	102,265	95,501	87,138
	Total	$ 3,987,268	$ 3,349,509	$ 2,835,719	$ 2,380,622	$ 621,549	$ 523,277	$ 530,000	$ 445,610
	General Property								
244	General Office Land	$ 174,500	$ 174,500	$ 172,350	$ 172,350	$ 2,150	$ 2,150	$	$
245	Other General Land	31,653	31,653	29,693	29,693	1,960	1,960		
246	Leaseholds								
247	General Office Structures	144,587	128,725	144,587	128,725				
248	Other General Structures								
249	General Office Equipment	59,429	45,504	53,938	41,371	2,420	1,805	3,071	2,328
250	General Store Equipment								
251	General Shop Equipment	18,055	14,979	14,929	12,365	1,772	1,462	1,354	1,152
252	General Stable Equipment	10,799	9,946	10,799	9,946				
253	General Garage Equipment	28,608	22,537	27,099	21,421	710	497	799	619
254	General Laboratory Equipment								
255	General Tel. and Tel. Equipment	204,214	161,151	184,153	145,302	20,061	15,849		
256	General Tools and Implements	7,295	5,747	6,473	5,120	477	353	345	274
257	Other General Equipment								
262	Patent Rights and Licenses								
	Total General Property	$ 679,140	$ 594,742	$ 644,021	$ 566,293	$ 29,550	$ 24,076	$ 5,569	$ 4,373
	General Overhead Charges	143,226	134,786	135,623	127,850	6,378	5,831	1,225	1,105
	Total	$ 822,366	$ 729,528	$ 779,644	$ 694,143	$ 35,928	$ 29,907	$ 6,794	$ 5,478

SUMMARY BY DISTRIBUTION PLANTS

Distribution Plant	Estimated Cost of Reproduction As of Dec. 31, 1923 New	Less Deterioration	Incomplete Construction	Estimated Cost of Reproduction As of Dec. 31, 1923 New	Less Deterioration
West Virginia:					
Amma	$ 957	$ 787			
Bannister	1,244	1,033			
Barboursville	25,821	21,506			
Big Creek	2,784	2,310			
Big Sandy	945	786			
Blue Creek	3,554	2,953			
Buff Lick	2,429	2,053			
Cedarville	730	621			
Ceredo	21,129	17,202			
Charleston	870,242	715,199			
Chelyan	16,338	13,510			
Cherry Tree Bottom	5,489	4,556			
Clendenin	30,240	24,885			
Coalburg	14,527	11,993			
Culloden	3,615	3,007			
East Bank	9,399	7,727			
East Lynn	5,161	4,271			
Elkview	3,384	2,798			
Fort Gay	9,475	7,849			
Gandeeville	2,392	1,940			
Gay	2,676	2,192			
Greyeagle	1,532	1,245			
Hunt	4,795	3,899			
Huntington	780,414	641,279			
Hurricane	16,763	13,831			
Jordan Creek	1,193	989			
Kanawha City	33,026	26,909			
Kenova	61,907	50,982			
Kermit	21,203	18,953			
King	870	727			
Kygar	893	740			
Lock Seven	1,676	1,373			
Logan	39,944	32,973			
McClanahan	2,448	1,991			
Milliken	542	459			

SUMMARY BY DISTRIBUTION PLANTS

Distribution Plant	Estimated Cost of Reproduction As of Dec. 31, 1923 New	Less Deterioration	Incomplete Construction	Estimated Cost of Reproduction As of Dec. 31, 1923 New	Less Deterioration
West Virginia (Concluded):					
Newton	$ 578	$ 490	$	$	$
Nitro	20,854	17,332			
Ona	1,914	1,609			
Poca	6,639	5,513			
Quick	922	765			
Ravenswood	26,775	22,110			
Reedy	10,070	8,309			
Rich Creek	335	284			
Ripley	21,445	17,737			
Sandyville	3,630	3,011			
Silverton	3,259	2,668			
Sissonville	3,223	2,657			
So. Charleston	64,679	52,992			
Spencer	44,392	36,442			
Stoffle	663	565			
Three Mile	1,037	850			
Walgrove	825	683			
Walton	5,969	5,137			
Williamson	102,931	85,198			
Miscellaneous	1,246	1,246			
Total in West Virginia	$ 2,324,718 (A)	$ 1,914,721 (A)	$ 601	$ 2,325,319	$ 1,915,322
Kentucky					
Ashland	$ 308,255	$ 253,983	$	$	$
Buchanan	989	832			
Burnaugh	1,101	903			
Catlettsburg	85,231	70,644			
Chinnville	8,971	7,417			
Greenup	19,291	15,812			
Himlerville	8,609	7,174			
Inez	9,297	7,865			
Louisa	33,489	27,738			

SUMMARY BY DISTRIBUTION PLANTS

Distribution Plant	Estimated Cost of Reproduction As of Dec. 31, 1923 New	Less Deterioration	Incomplete Construction	Estimated Cost of Reproduction As of Dec. 31, 1923 New	Less Deterioration
Kentucky (Concluded):					
Russell	$ 27,122	$ 22,476	$	$	$
Warfield	4,164	3,486			
Wolf Creek	1,994	1,650			
Miscellaneous	25	25			
Total in Kentucky	$ 509,076 (A)	$ 420,543 (A)	$ 469	$ 509,545	$ 421,012
Ohio					
Bradrick	$ 5,822	$ 4,768	$	$	$
Chesapeake	17,400	14,344			
Coal Grove	14,022	11,602			
Corryville	6,937	5,667			
Ironton	236,818	194,852			
New Boston	81,424	67,679			
Portsmouth	43,397	35,725			
Proctorville	15,117	12,470			
Wheelersburg	12,643	10,445			
Miscellaneous	51	51			
Total in Ohio	$ 434,389 (A)	$ 358,361 (A)	$ 111	$ 434,500	$ 358,472

NOTE —(A) Includes Right of Way

Estimated Cost of Reproduction NEW

Summary by Distribution Plants and Accounts

Acct. No.:	228	230	231	232	233	234	235	236	237	239	
Distribution Plant *West Virginia:*	Land	Rights of Way	Dist. Reg. Structures	Other Dist. Structures	Gas Receivers and Dist. Regulators	Dist. Line Equipment	Service Line Equipment	Meters	Meter Installations	Other Dist. System Equipment	Total NEW
Amma	$	$	$ 109	$	$ 87	$ 442	$ 203	$ 91	$ 25	$	$ 957
Bannister			228		153	278	250	200	127	8	1,244
Barboursville	131		843		1,072	10,488	5,244	5,260	2,674	109	25,821
Big Creek	51		196		253	1,102	203	580	356	43	2,784
Big Sandy	13		82		38	501	16	180	115		945
Blue Creek					355	1,361	876	609	353		3,554
Buff Lick			131		93	272		1,716	166	51	2,429
Cedarville					169			293	255	13	730
Ceredo	1		846		262	10,978	4,579	2,716	1,674	64	21,129
Charleston	906		5,845	12,483	14,693	469,325	126,685	179,160	57,705	3,440	870,242
Chelyan			147		650	7,659	3,374	2,745	1,682	81	16,338
Cherry Tree Bottom			113		38	2,125	1,276	1,169	725	43	5,489
Clendenin			455		1,193	16,211	4,232	5,463	2,570	116	30,240
Coalburg			146	435	1,132	6,991	3,459	1,443	871	50	14,527
Culloden					238	1,284	1,046	613	382	52	3,615
Eastbank			311		317	5,184	2,426	701	433	27	9,399
East Lynn			370		278	2,133	1,018	855	429	78	5,161
Elkview			114		141	1,435	470	747	472	5	3,384
Fort Gay	101		258		374	4,137	1,969	1,567	960	109	9,475
Gandeeville			131		186	1,010	467	290	264	44	2,392
Gay					245	1,674	297	262	198		2,676
Greyeagle						1,143	175	131	83		1,532
Hunt					131	3,648	501	318	204		4,795
Huntington	26,035		7,136	9,563	10,790	503,040	135,569	63,334	22,876	2,071	780,414
Hurricane			192	799	666	6,919	3,495	2,874	1,685	133	16,763
Jordan Creek					299	511	141	138	89	15	1,193
Kanawha City			114		1,041	23,453	3,396	3,441	1,384	197	33,026
Kenova	400		422	296	1,391	32,946	12,774	9,583	3,579	516	61,907
Kermit	8,375		109		346	6,442	2,718	2,233	842	138	21,203
King			98		186	439		90	57		870

Estimated Cost of Reproduction NEW
Summary by Distribution Plants and Accounts
(Continued)

Acct. No.:	228	230	231	232	233	234	235	236	237	239	
Distribution Plant *West Virginia:*	Land	Rights of Way	Dist. Reg. Structures	Other Dist. Structures	Gas Receivers and Dist. Regulators	Dist. Line Equipment	Service Line Equipment	Meters	Meter Installations	Other Dist. System Equipment	Total NEW
Kyger	$	$	$	$	$ 131	$ 345	$ 125	$ 122	$ 113	$ 57	$ 893
Lock Seven						1,047	282	218	129		1,676
Logan	16		478	174	186	19,527	10,086	6,369	2,825	283	39,944
McClanahan			114		169	1,755	172	142	89	7	2,448
Milliken					328	16		117	76	5	542
Newton					169	25		244	140		578
Nitro						6,099	713	9,242	4,563	237	20,854
Ona			49		369	474	501	323	198		1,914
Poca					253	2,560	1,718	1,285	767	56	6,639
Quick				109	186	382		150	95		922
Ravenswood	60		389		679	12,338	6,328	4,904	1,867	210	26,775
Reedy			209		413	4,493	2,125	1,391	1,215	134	10,070
Rich Creek					153	18		100	64		335
Ripley	81		294		461	9,573	4,648	3,363	2,851	174	21,445
Sandyville			200		327	1,329	779	501	401	93	3,630
Silverton	11		174		131	1,801	435	350	269	88	3,259
Sissonville			130		169	1,656	531	474	250	13	3,223
South Charleston			724		4,001	39,439	8,418	8,463	3,294	340	64,679
Spencer	324		533		1,781	25,843	7,279	5,958	2,326	348	44,392
Stoffel			71		224	19		210	134	5	663
Three Mile					86	632	172	90	57		1,037
Walgrove			114		76	284	250	59	38	4	825
Walton	1,141		98		320	1,976	965	733	633	103	5,969
Williamson	109		1,263	6,044	2,453	41,039	23,624	20,759	7,696	553	102,931
Miscellaneous	1,246										1,246
Total in West Virginia	$ 38,992	$ 3,595	$ 23,326	$ 29,963	$ 49,882	$1,295,803	$ 385,410	$ 354,369	$ 133,325	$ 10,113	$2,324,718

Estimated Cost of Reproduction New LESS OBSERVED DETERIORATION

Summary by Distribution Plants and Accounts

Acct No.:	228	230	231	232	233	234	235	236	237	239	
Distribution Plant	Land	Rights of Way	Dist. Reg. Structures	Other Dist. Structures	Gas Receivers and Dist. Regulators	Dist. Line Equipment	Service Line Equipment	Meters	Meter Installations	Other Dist. System Equipment	Total Less Deterioration
West Virginia:											
Amma	$	$	$ 87	$	$ 74	$ 354	$ 173	$ 77	$ 22	$	$ 787
Bannister			183		130	223	213	170	108	6	1,033
Barboursville	131		778		911	8,391	4,458	4,471	2,273	93	21,506
Big Creek	51		157		215	881	173	493	303	37	2,310
Big Sandy	13		77		32	401	13	153	97		786
Blue Creek					302	1,089	745	517	300		2,953
Buff Lick			112		79	218		1,459	141	44	2,053
Cedarville					144			249	217	11	621
Ceredo	1		517		223	8,783	3,892	2,309	1,423	54	17,202
Charleston	906		4,665	9,738	12,489	375,460	107,682	152,286	49,049	2,924	715,199
Chelyan			129		552	6,127	2,868	2,333	1,432	69	13,510
Cherry Tree Bottom			93		32	1,700	1,084	994	616	37	4,556
Clendenin			379		1,014	12,969	3,598	4,642	2,184	99	24,885
Coalburg			122	365	962	5,593	2,940	1,227	741	43	11,993
Culloden					202	1,027	889	521	324	44	3,007
East Bank			262		269	4,147	2,062	596	368	23	7,727
East Lynn			304		237	1,707	866	726	365	66	4,271
Elkview			91		120	1,148	399	635	401	4	2,798
Fort Gay	101		207		318	3,309	1,673	1,332	816	93	7,849
Gandeeville			68		158	808	397	246	225	38	1,940
Gay					209	1,339	253	222	169		2,192
Greyeagle						915	148	112	70		1,245
Hunt					111	2,919	426	270	173		3,899
Huntington	26,635		5,994	7,374	9,171	402,432	115,234	53,834	19,445	1,760	641,279
Hurricane			172	599	566	5,535	2,970	2,443	1,433	113	13,831
Jordan Creek					254	409	120	117	76	13	989
Kanawha City			105		885	18,762	2,887	2,925	1,177	168	26,909
Kenova	400		309	252	1,182	26,356	10,858	8,145	3,042	438	50,982
Kermit	8,375		87		294	5,154	2,311	1,898	716	118	18,953
King			92		158	351		77	49		727

Estimated Cost of Reproduction New LESS OBSERVED DETERIORATION

Summary by Distribution Plants and Accounts
(Continued)

Acct No.:	228	230	231	232	233	234	235	236	237	239	
Distribution Plant	Land	Rights of Way	Dist. Reg. Structures	Other Dist. Structures	Gas Receivers and Dist. Regulators	Dist. Line Equipment	Service Line Equipment	Meters	Meter Installations	Other Dist. System Equipment	Total Less Deterioration
West Virginia—(Concluded):											
Kyger	$	$	$	$	$ 111	$ 276	$ 106	$ 103	$ 96	$ 48	$ 740
Lock Seven						838	240	186	109		1,373
Logan	16		382	167	158	15,622	8,573	5,414	2,401	240	32,973
McClanahan			94		144	1,404	146	121	76	6	1,991
Milliken					279	12		99	65	4	459
Newton					144	20		207	119		490
Nitro						4,880	606	7,856	3,788	202	17,332
Ona			47		314	379	426	275	168		1,609
Poca					215	2,048	1,460	1,092	651	47	5,513
Quick				93	158	306		127	81		765
Ravenswood	60		290		578	9,870	5,378	4,169	1,587	178	22,110
Reedy			227		351	3,595	1,807	1,182	1,033	114	8,309
Rich Creek					130	15		85	54		284
Ripley	81		225		392	7,658	3,951	2,859	2,423	148	17,737
Sandyville			162		278	1,063	662	426	341	79	3,011
Silverton	11		136		111	1,440	370	298	228	74	2,668
Sissonville			112		144	1,324	451	403	212	11	2,657
South Charleston			604		3,401	31,551	7,155	7,193	2,799	289	52,992
Spencer	324		405		1,514	20,675	6,187	5,064	1,977	296	36,442
Stoffel			64		190	15		179	113	4	565
Three Mile					73	505	146	77	49		850
Walgrove			91		65	228	213	51	32	3	683
Walton	1,141		74		272	1,581	820	623	538	88	5,137
Williamson	100		1,119	4,836	2,085	32,831	10,570	17,645	6,542	470	85,198
Miscellaneous	1,246										1,246
Total in West Virginia	$ 38,992	$ 3,595	$ 19,022	$ 23,424	$ 42,400	$1,036,643	$ 37,599	$ 301,213	$ 113,237	$ 8,596	$1,914,721 (A

Estimated Cost of Reproduction New LESS OBSERVED DETERIORATION

Summary by Distribution Plants and Accounts
(Concluded)

Acct No.:	228	230	231	232	233	234	235	236	237	239	
Distribution Plant	Land	Rights of Way	Dist. Reg. Structures	Other Dist. Structures	Gas Receivers and Dist. Regulators	Dist. Line Equipment	Service Line Equipment	Meters	Meter Installations	Other Dist. System Equipment	Total Less Deterioration
Kentucky:											
Ashland	$ 1,576	$	$ 1,997	$ 642	$ 4,281	$ 132,458	$ 39,087	$ 54,801	$ 18,213	$ 928	$ 253,983
Buchanan					157	157	266	155	97		832
Burnaugh					111	507	186	60	38	1	903
Catlettsburg	80		1,961	3,268	1,498	27,410	16,403	12,389	7,186	449	70,644
Chinnville	30		224		373	3,280	1,422	1,183	731	174	7,417
Greenup	75		154	234	545	9,684	2,690	1,451	824	155	15,812
Himlerville			224		294	2,499	2,465	1,011	655	26	7,174
Inez	1,050		145		261	2,980	1,407	999	907	116	7,865
Louisa			445	834	1,085	10,216	5,974	5,719	3,199	266	27,738
Russell	150		169		441	9,433	6,074	3,769	2,343	97	22,476
Warfield	200		81		215	1,282	604	553	465	86	3,486
Wolf Creek			82		120	711	372	186	113	66	1,650
Miscellaneous	25										25
Total in Kentucky	$ 3,186	$ 538	$ 5,482	$ 4,978	$ 9,381	$ 200,617	$ 76,950	$ 82,278	$ 34,771	$ 2,364	$ 420,543 (A)
Ohio:											
Bradrick	$ 25	$	$ 87	$	$ 79	$ 2,850	$ 810	$ 476	$ 314	$ 127	$ 4,768
Chesapeake	25		131		182	7,081	3,366	2,108	1,385	66	14,344
Coal Grove			384		337	5,381	2,714	1,663	1,043	80	11,602
Corryville	25		87		158	3,623	678	607	400	89	5,667
Ironton	293		1,283	341	2,799	104,033	31,037	39,447	14,549	1,070	194,852
New Boston	1,865		1,080	2,403	1,886	24,824	14,820	14,282	6,096	423	67,679
Portsmouth	569		821		1,208	19,665	1,809	6,958	4,345	350	35,725
Proctorville	100		209		136	6,103	2,819	1,913	1,127	63	12,470
Wheelersburg	30		375		508	4,361	2,367	1,675	1,019	110	10,445
Miscellaneous	51										51
Total in Ohio	$ 2,983	$ 758	$ 4,457	$ 2,744	$ 7,293	$ 177,921	$ 60,420	$ 69,129	$ 30,278	$ 2,378	$ 358,361 (A)

NOTE: (A) Includes Rights of Way.

Summary of Valuation of Leaseholds and Natural Gas Rights

Summarizing the foregoing computations results in the total estimated value of Leaseholds and Natural Gas Rights as follows:

Estimated Value of Proven and Probably Productive Acreage	$33,155,422
Estimated Value of Unproven Acreage	3,293,754
Total Estimated Value of Leaseholds and Natural Gas Rights	$36,449,176

SUMMARIES

SUMMARY OF VALUATION

By Systems

Classification	Estimated Cost of Reproduction As of December 31, 1923 New	Less Deterioration
Production System	$49,023,964	$44,279,576
Transmission System	13,467,823	11,154,326
Distribution System	3,269,363	2,694,806
General Property	679,140	594,742
Total	$66,440,290	$58,723,450
General Overhead Charges	7,063,311	6,357,046
Working Capital	990,000	990,000
Total	$74,493,601	$66,070,496

PRINCIPAL UNIT PRICES USED IN ESTIMATING REPRODUCTION COST

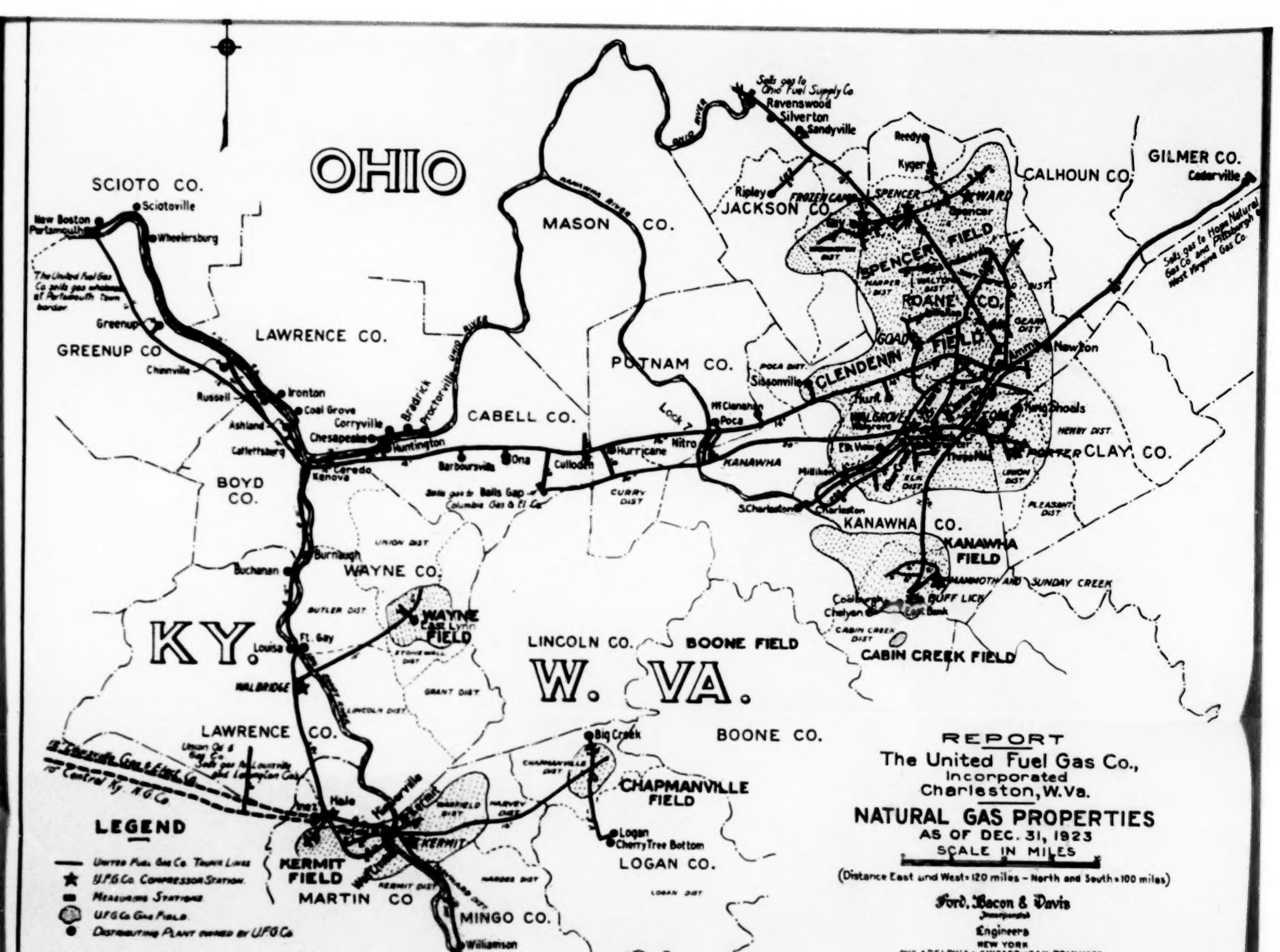
United Fuel Gas Co.
Principal Unit Prices Used in Estimating Cost of Reproduction New

Item	Unit Price
Field Pipe Lines, per foot, installed:	
(Gathering Lines)	
2 in. Screwed End	$ .3092
3 in. " "	.5686
4 in. " "	.7649
6 in. " "	1.2983
8 in. Plain End	1.8647
10 in. " "	2.4429
12 in. " "	3.2123
14 in. " "	3.6433
16 in. " "	4.1382
18 in. " "	4.8787
20 in. " "	5.3562
Transmission Pipe Lines, per foot, installed:	
2 in. Screwed End	$ .3124
3 in. " "	.5732
4 in. " "	.7717
6 in. " "	1.3080
8 in. " "	1.8785
10 in. " "	2.4659
12 in. " "	3.2640
14 in. Plain End	3.6738
16 in. " "	4.1720
18 in. " "	4.9191
20 in. " "	5.3999
Distribution Pipe Lines, per foot, installed:	
2 in. Charleston, D. P.	.2881
3 in. " " "	.5143
4 in. " " "	.6882
6 in. " " "	1.1915
8 in. " " "	1.5864
10 in. " " "	2.1137

United Fuel Gas Co.
Principal Unit Prices Used in Estimating Cost of Reproduction New

(Concluded)

Item	Unit Price
12 in. " " "	2.8810
14 in. " " "	3.1524
16 in. " " "	3.6285
Wells:	
Average Cost per Well	$10,163.32
Material Cost per ft. (Average)	1.37
Labor Cost per ft. (Average)	3.74
Total Cost per ft. (Average)	$ 5.11
Compressing Stations:	
Average Cost per H. P. of Comp. Stations	$ 124.70
Meters—installed:	
Charleston Dist. Plant	
Tobey A	$ 13.84
" 1	14.33
" 2	23.85
" 3	37.15
" 4	83.27
Services—installed:	
Charleston Dist. Plant	
1 in.	$ 8.42
1-¾ in.	9.52
1-½ in.	10.57
2 in.	12.96


OHIO
SCIOTO CO.
Sciotoville
New Boston
Portsmouth
Wheelersburg
The United Fuel Gas Co sells gas wholesale at Portsmouth town border
Greenup
GREENUP CO
Chanville
Russell
Ironton
Coal Grove
Ashland
Coryville
Chesapeake
Catlettsburg
Kenova
BOYD CO.
Burnaugh
Buchanan
WAYNE CO.
KY.
Louisa
Ft. Gay
LAWRENCE CO.
LAWRENCE CO.
Bradrick
Proctorville
Ohio River
Sells gas to Ohio Fuel Supply Co
Ravenswood
Silverton
Sandyville
Ripley
JACKSON CO
MASON CO.
Kanawha River
CABELL CO.
Huntington
Barboursville
Ona
Culloden
Hurricane
Nitro
Lock 7
Mt Clenahan
Poca
POCA DIST
Sissonville
PUTNAM CO.
Sells gas to Ballo Gap Columbia Gas & El Co
CURRY DIST
KANAWHA
S. Charleston
Charleston
KANAWHA CO.
KANAWHA FIELD
MAMMOTH AND SUNDAY CREEK
Coalburgh
Chelyan
BUFF LICK
East Bank
CABIN CREEK DIST
CABIN CREEK FIELD
Millikens
ELK DIST
UNION DIST
PLEASANT DIST
Reedy
Kyger
CALHOUN CO.
GILMER CO.
Cedarville
Sells gas to Hope Natural Gas Co and Pittsburgh & West Virginia Gas Co.
FROZEN CAMP
SPENCER
WARD
Spencer
SPENCER FIELD
HARPER DIST
WALTON DIST
ROANE CO.
GOAD FIELD
GRANT DIST
Newton
CLENDENIN
Hurst
Hillgrove
Elk View
Three Mile
King Shoals
HENRY DIST
PORTER
CLAY CO.
UNION DIST
BUTLER DIST
WAYNE
East Lynn
FIELD
STONE WALL DIST
GRANT DIST
LINCOLN DIST
HALBRIDGE
Union Oil & Gas Co
Sells gas to Louisville and Lexington Cos
To Central Ky NG Co
BOONE FIELD
LINCOLN CO.
W. VA.
BOONE CO.
Big Creek
CHAPMANVILLE DIST
CHAPMANVILLE FIELD
Logan
Cherry Tree Bottom
LOGAN CO.
LOGAN DIST
Inez
Hale
Kermit
KERMIT
KERMIT FIELD
MARTIN CO
MARFIELD DIST
HARVEY DIST
KERMIT DIST
HARDEE DIST
MINGO CO.
Williamson
LEGEND
United Fuel Gas Co. Trunk Lines
U.F.G. Co. Compressor Station
Measuring Stations
U.F.G. Co. Gas Fields
Distributing Plant owned by U.F.G. Co.
REPORT
The United Fuel Gas Co.,
Incorporated
Charleston, W.Va.
NATURAL GAS PROPERTIES
AS OF DEC. 31, 1923
SCALE IN MILES
(Distance East and West = 120 miles – North and South = 100 miles)
Ford, Bacon & Davis
Incorporated
Engineers
NEW YORK

[fols. 819 & 820] UEBELACKER EXHIBIT No. 3

Estimated Historical Cost United Fuel Gas Company, Incorporated, Property Existing at December 31, 1923

Letter of Transmittal

Established 1894

Ford, Bacon & Davis, Incorporated, Engineers, Valuations-Reports-Construction-Management, 115 Broadway, New York

Frank R. Ford, George W. Bacon, George H. Davis, Charles F. Uebelacker, Charles N. Black, William Von Phul

New York, Philadelphia, Chicago, San Francisco

New York, May 26, 1924.

United Fuel Gas Company, Incorporated,
Charleston, W. Va.

DEAR SIRS: We hand you herewith our report upon the estimated historical cost of the physical property, natural gas rights and leaseholds of the United Fuel Gas Company, Inc. and its subsidiaries, Warfield Natural Gas Company and Cabin Creek Gas Company, existing December 31, 1923.

Very truly yours, Ford, Bacon & Davis, Inc.

[fol. 821] Report

Valuation United Fuel Gas Company, Incorporated

Estimated Historical Cost Property Existing at December 31, 1923

Scope of Report

The purpose of this report is to set forth the estimated historical cost of the physical property of the United Fuel Gas Company, Inc.; existing at December 31, 1923.

The inventory and its verification, and the general field work upon which this estimate has been based is to all intents and purposes the same as that shown in the valuation

of the physical property on a reproduction new basis as of December 31, 1923. That valuation has been made the basis of a separate report. It is referred to in the following paragraphs as the "Valuation Report as of December 31, 1923."

The inventory has been priced herein on an estimated historical cost basis:

That is the physical property now in existence and installed prior to December 31, 1915 at prices representing the average of the ten-year period 1906 to 1915. The cost of property installed since 1915 was determined from the records of the Company, which showed the net cost of additions and retirements from December 31, 1915 to August 31, 1923. This method was found to give the most accurate and practical determination of historical cost.

To the total estimated historical cost of the physical property arrived at under the general method described above has been added an estimate of the construction overheads.

Inventory and Prices

In applying the above general method certain adjustments had to be made in some of the smaller accounts due to the nature of the records which were used. Theses adjustments are explained in detail in the subsequent paragraphs under the major property headings.

In compiling the unit prices for application to the property installed prior to December 31, 1915 the same procedure was followed as was used and described in the Valuation Report as of December 31, 1923.

Land

The amounts included in this report for land are the costs shown on the Company's books. No attempt was made to have this land appraised as of the date of its acquisition.

Rights of Way

The cost of Rights of Way and Rights of Way Expense have been included at the total amounts of these accounts as shown by the books of the Company

[fol. 822] Buildings and Structures

The prices for buildings and structures were built up in the same manner as was described in the Valuation Report as of December 31, 1923. The prices used for structural steel, steel products such as sheet iron, corrugated iron and other metal products, were obtained from records of actual prices for the years 1906-1915. Prices of certain other commodities such as lumber, cement, sand, gravel, etc., were arrived at by trending the present day costs to each of the years in the period under discussion by means of Government trends and other published data. In this manner the best prices available for each year during the period 1906-1915 were obtained. After determination of basic commodity prices the procedure followed in compiling the unit prices for application to the structures is the same as that set forth in the report before referred to. The labor rates were taken from the Company's records and from records of labor rates paid on similar construction work in West Virginia back to the year 1906.

The inventory designated the buildings and structures installed subsequent to December 31, 1915, the cost of these buildings being determined from the books.

Gas Wells

The cost of the gas well construction account as developed from the books of the Company was subjected to a careful check as to accuracy of record. The result of this check was to verify the costs as shown by well records of the Company as being a satisfactory measure of the estimated historical cost of this account. It was therefore decided to use the cost as shown by the well records as being the total cost of the gas well construction account of the active wells.

With reference to the gas well equipment account average costs of casing and tubing for the period 1906-1915 were compiled from quotations by representative concerns covering each year and applied to material in wells drilled or acquired prior to December 31, 1915. To this total was added the cost of equipment in wells drilled or acquired subsequent to December 31, 1915, at the amounts shown by the well records of the Company.

Field Lines

The inventory of field lines was prepared to show the gathering lines installed prior to December 31, 1915 and the book cost of the subsequent additions.

The inventory of well lines was segregated to show the lines installed prior to December 31, 1915 and the book cost of the lines installed subsequent to that date, using as a basis the date of completion of the wells to which the lines are attached.

The prices for materials for the period 1886-1915 were taken from records of quotations of representative manufacturers for each year of that period. The same percentages [fol. 823] were allowed for fittings as was used in the Valuation Report as of December 31, 1923. The labor prices used for the period 1886-1915 were built up from Company records and from records of labor rates paid in the fields. The method of building up unit prices for the period 1886-1915 followed exactly that described in the above referred to report.

Transmission Lines

The inventory of transmission lines was prepared to show the date of installation of each line. The lines installed prior to December 31, 1915 were priced at average prices for the period 1886-1915. The lines installed subsequent to December 31, 1915 are included herein at the cost as developed from the books for the individual lines. Commodity prices used in the average 1886-1915 prices were obtained from quotations made by representative manufacturers for the purchase of pipe in large quantities. The labor rates were obtained from the records of the Company, and from records of rates actually paid in West Virginia. The method of compiling unit prices follows exactly that described in the Valuation Report as of December 31, 1923.

Distribution Lines

The method used in the determination of the estimated historical cost of distribution lines departed slightly from the method described under transmission and field lines. This was due to the fact that the date of the installation of

each line in the distribution plants could not be determined accurately. The method used consisted of the preparation of an inventory of lines in existence at December 31, 1915; pricing this inventory at the average of prices during the period 1906 to 1915, and adding to this result the net change in investment in the period from December 31, 1915 to December 31, 1923 as shown by the books. This addition has the effect of making the necessary changes in the 1915 inventory and of adding the investment at book cost for the period subsequent to 1915.

The commodity prices used in the average 1906 to 1915 prices were obtained from quotations made by representative manufacturers for the purchase of pipe in large quantities. The labor rates were obtained from the records of the Company and from records of rates actually paid in West Virginia. The method used in compiling unit prices for period 1906 to 1915 follows exactly that described in the Valuation Report as of December 31, 1923.

Compressing Station Equipment and Structures

The compressing stations of this Company were all installed subsequent to 1913. A careful scrutiny was made of the costs at which the charges were made in the books and it was found that the books reflected an accurate historical cost of the stations. The book prices have therefore been [fol. 824] considered as the estimated historical cost of the compressing station equipment and structures, these two accounts being consolidated in the records.

Measuring Station Equipment

As the inventory of measuring stations developed the fact that practically all present stations had been installed subsequent to 1915 the book cost has been taken as the estimated historical cost of this account.

Meters and Services

As it was impracticable to prepare the inventories in such manner as to show the date of installation of each item, it was necessary to follow the plan of pricing as modified in the description under the heading "Distribution Lines."

This method generally was to price an inventory as of December 31, 1915 at the average 1906 to 1915 prices and add to this total the net changes in investment as shown on the books for the period December 31, 1915 to December 31, 1923. This addition has the effect of making the necessary changes in the 1915 inventory and of adding the investment at book cost for the period subsequent to December 1915.

Drilling and Cleaning Equipment

It was impracticable to prepare the inventory of drilling and cleaning equipment in such manner as to show the date of acquisition of each item. However, the nature of this equipment is such as to make it reasonable to assume that it has practically all been acquired subsequent to 1915. The major items of value, such as cables, lines, etc., are undoubtedly of recent acquisition. For this reason, the book costs have been used as the estimated historical cost basis for this account.

Telephone and Telegraph Equipment

The inventory of this equipment was set up by lines, giving the date of installation of each line. The general rule was followed in this case, that is, the lines installed prior to December 31, 1915 were priced on the average 1906 to 1915 price basis and the lines installed subsequent to December 31, 1915 were added at the cost of acquisition shown by the books. The prices of labor and commodities used in the estimaed 1906 to 1915 price basis were obtained from records of quotations during the years in question. The method used in compiling unit prices followed that described in the Valuation Report as of December 31, 1923.

General Equipment

This group includes shop, office, garage, and stable equipment, general tools and implements. As the majority of these items were acquired subsequent to 1915, the book cost has been used throughout.

[fol. 825] **Direct Overheads**

The direct overheads used in building up the average prices for the period 1906 to 1915 are the same as those de-

scribed and used in the Valuation Report as of December 31, 1923.

General Overheads

The general overhead rates included herein are the same as those described in detail in the Valuation Report as of December 31, 1923, with the exception that interest has been taken at 6 per cent instead of 8 per cent as used in the other report.

Working Capital

Working capital in this report is taken as the same amount as was used in the Valuation Report as of December 31, 1923.

Leaseholds and Natural Gas Rights

The leaseholds and natural gas rights are included herein at the amounts shown on the books of the Company as of December 31, 1923.

Summaries of the Estimated Historical Cost are attached, set up in accordance with "A Uniform Classification of Accounts for Natural Gas Utilities prescribed by The Public Service Commission of West Virginia.

Summaries

United Fuel Gas Company, Inc.

Summary of Estimated Historical Cost

Classification	Estimated historical cost property existing Dec. 31, 1923
Production System	$15,590,875
Transmission System	9,238,086
Distribution System	2,226,203
General Property	319,211
Total	$27,374,375
General Overhead Charges	4,449,333
Total	$31,823,708
Working Capital	990,000
Total	$32,813,708

[fol. 826]

United Fuel Gas Company, Inc.

Summary of Estimated Historical Cost by States

Classification	Estimated historical cost property existing December 31, 1923			
	Total	West Virginia	Kentucky	Ohio
Production System	$15,590,875	$15,068,360	$522,515	
Transmission System	9,238,086	7,955,766	1,055,431	$226,889
Distribution System	2,226,203	1,587,456	340,357	298,390
General Property	319,211	293,265	21,968	3,978
Total	$27,374,375	$24,904,847	$1,940,271	$529,257
General Overhead Charges	4,449,333	3,914,933	419,563	114,837
Total	$31,823,708	$28,819,780	$2,359,834	$644,094
Working Capital	990,000			
Total	$32,813,708			

[fol. 827] United Fuel Gas Company, Inc.

Summary of Estimated Historical Cost by States and Accounts

Acct. No.	Description	Estimated historical cost property existing December 31, 1923			
	Production System Properties:	Total	West Virginia	Kentucky	Ohio
					$
204	Land				
205	Leaseholds				
207	Natural Gas Rights	$6,732,920	$6,693,254	$39,666	
206	Rights of Way	97,796	89,483	8,313	
208	Gas Well Structures	59,360	59,360		
209	Field Measuring Station Structures	1,906	1,831	75	
210	Other Production System Structures	69,581	67,958	1,623	
211	Gas Well Construction	4,043,573	3,895,486	148,087	
212	Gas Well Equipment	1,514,101	1,453,903	60,198	
213	Field Line Construction	1,047,919	958,796	89,123	
214	Field Line Equipment	1,756,934	1,590,478	166,456	
215	Field Measuring Station Equipment	47,179	45,314	1,865	
216	Drilling and Cleaning Equipment	122,017	118,213	3,804	
217	Other Production System Equipment	16,950	16,085	865	
	Total Production System	$15,510,236	$14,990,161	$520,075	$
	Incomplete Construction	80,639	78,199	2,440	
		$15,590,875	$15,068,360	$522,515	$
	General Overhead Charges	1,724,856	1,630,908	93,948	
	Total	$17,315,731	$16,699,268	$616,463	$

Summary of Estimated Historical Cost by States and Accounts—Continued

Acct. No.	Description	Estimated historical cost property existing December 31, 1923			
		Total	West Virginia	Kentucky	Ohio
[fol. 828]	Transmission System Properties:				
218	Land	$3,533	$3,383	$150	
219	Leaseholds				
220	Rights of Way	138,882	104,856	26,526	$7,500
221	Compressing Station Structures (A)				
222	Transmission System Measuring Station Structures	2,822	1,983	699	140
223	Other Transmission System Structures	149,765	142,202	6,132	1,431
224	Compressing Station Equipment (A)	2,839,966	2,735,006	104,960	
225	Transmission System Measuring Station Equipment	28,235	22,561	3,829	1,845
226	Transmission System Equipment	6,061,359	4,936,562	910,103	214,694
227	Other Transmission System Equipment	17,159	13,176	2,704	1,279
	Total Transmission System	$9,241,721	$7,959,729	$1,055,103	$226,889
	Incomplete Construction	3,635*	3,963*	328	
		$9,238,086	$7,955,766	$1,055,431	$226,889
	General Overhead Charges	2,216,892	1,909,146	253,293	54,453
	Total	$11,454,978	$9,864,912	$1,308,724	$281,342

NOTE.—(A) Figures taken from trial balance, where they are shown as for both Accts. Nos. 221 and 224.

[fol. 829] Distribution System Properties:

228	Land	$22,705	$17,409	$2,313	$2,983
229	Leaseholds				
230	Rights of Way	4,152	3,052	457	643
231	District Regulator Structures	17,929	11,694	3,969	2,257
232	Other Distribution Structures	18,010	13,865	2,540	1,605
233	Gas Receivers and District Regulators	21,454	15,260	3,344	2,850
234	Distribution Line Equipment	1,093,253	794,286	158,716	140,251
235	Service Line Equipment	361,200	260,282	52,723	48,195
236	Meters	534,420	373,682	87,299	73,439
237	Meter Installations	141,441	89,861	27,571	24,009
238	House Regulators				
239	Other Distribution System Equipment	11,367	7,464	1,856	2,047
	Total Distribution System	$2,225,022	$1,586,855	$339,888	$298,279
	Incomplete Construction	1,181	601	469	111
		$2,226,203	$1,587,456	$340,357	$298,390
	General Overhead Charges	444,559	316,969	68,002	59,588
	Total	$2,670,762	$1,904,425	$408,359	$357,978

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Summary of Estimated Historical Cost by States and Accounts—Continued

Acct. No.	Description	Estimated historical cost property existing December 31, 1923			
		Total	West Virginia	Kentucky	Ohio
[fol. 830]	General Properties:				
244	General Office Land	$27,216	$24,766	$2,450	
245	Other General Land	8,762	7,935	827	
246	Leaseholds				
247	General Office Structures	72,096	72,096		
248	Other General Structures				
249	General Office Equipment	39,951	36,273	1,681	$1,997
250	General Store Equipment				
251	General Shop Equipment	11,568	9,759	920	898
252	General Stable Equipment	10,014	10,014		
253	General Garage Equipment	28,675	26,930	943	802
254	General Laboratory Equipment				
255	General Telephone and Telegraph Equipment	115,157	100,411	14,746	
256	General Tools and Implements	5,772	5,090	401	281
257	Other General Equipment				
202	Patent Rights and Licenses				
	Total General Property	$319,211	$293,265	$21,968	$3,978
	General Overhead Charges	63,026	57,910	4,320	796
	Total	$382,237	$351,175	$26,288	$4,774

[fols. 831 & 832] UEBELACKER EXHIBIT No. 5

United Fuel Gas Company, Incorporated

West Virginia Distribution

Analyses of Expenses and Return on Investment per M. C. F. and in Total

Expenses and Sales, Year 1923, Actual

Valuation Basis—Estimated Cost of Reproduction New and Less Observed Deterioration

[fol. 833] United Fuel Gas Company, Inc.

Notes on Analyses of Expenses and Return on Investments

Expenses and Sales:

Expenses and sales are as shown by Company financial staements for year 1923. Warfield Natural Gas Co. and Cabin Creek Gas Co. expenses and sales (except intercompany) have been consolidated with United Fuel Gas Co. Allowance has been made for general expenses applicable to Cabin Creek Gas Co. oil and gasoline operations. Allocation of general expenses to Virginian Gasoline & Oil Co. have been accepted as accurate as made by Company.

Depreciation:

Depreciation has been determined for each class of material by applying percentage rates determined for each class. Basis is Estimated Cost of Reproduction New except as noted in Production System.

Amortization:

Amortization of Proven Acreage is based upon the depletion of gas content at the value per M. C. F. fixed in Valuation Report as of December 31, 1923. Amortization of Unproven Acreage is based upon the average length of time during which the Company has held unproven acreage before abandoning it.

Amortization of Physical Property has been based upon the Deteriorated value of the Property which the Company will not be able to salvage.

[fol. 834] Depletion:

Depletion has been based upon the depletable value of wells and field lines as set forth in Valuation Report as of December 31, 1923.

Return:

In every calculation of return the deteriorated value only of Gas Wells has been used.

Allocation to West Virginia:

Production System units have been considered on basis of total gas sold.

Transmission System Expenses, Depreciation, Amortization and Return on Investment have been allocated to West Virginia on basis of gas sales, except where pipe lines are concerned. In the case of pipe lines the allocation has been made on the basis of miles of main located in West Virginia and Kentucky, excluding the section of Kentucky extending North and West from the State Line along the Ohio River. This system has been considered as handling all gas sold except field sales. The balance of the system in Kentucky and the system in Ohio have been considered as handling only the gas sold along the Ohio River in Kentucky and in Ohio. In other words, the gas sold in the last named section is considered as having been handled twice.

Distribution System property and expenses are as actually located or segregated in the various distribution plants.

Working Capital is allocated on the basis of expenses incurred in operating the plant in each State and system.

[fol. 835] UEBELACKER EXHIBIT No. 5

United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales, Year 1923, Actual Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Return at 8 per Cent

	Cost per M reproduction new		Cost per M less observed deterioration	
Expense:				
Production	$0 05005		$0 05005	
Transmission	01270		01270	
		$0 06275		$0 06275
Depreciation:				
Production	00425		00425	
Transmission	01246		01246	
General (Less General in Distribution)	00043		00043	
		01714		01714
Return:				
Production	08071		07921	
Transmission	02701		02294	
General (Less General in Distribution)	00106		00093	
Working Capital—Production	00116		00116	
" " —Transmission	00029		00029	
		11023		10453

UEBELACKER EXHIBIT No. 5—Continued

	Cost per M reproduction new		Cost per M less observed deterioration	
Amortization:				
Proven Acreage	03972		03972	
Unproven Acreage	00637		00637	
Production System (Plant not Depletable)	00396		00396	
Transmission System	01518		01518	
General Property	00032		00032	
		06555		06555
Depletion		03363		03363
Total City Gate Rate		$0 28930		$0 28360
Distribution:				
Expense	02655		02655	
Depreciation—Distribution Property	00748		00748	
" —General Property	00086		00086	
Return—Distribution Property	02142		01798	
" —General Property	00139		00128	
" —Working Capital	00064		00064	
Amortization—Distribution Property	01328		01328	
" —General Property	00018		00018	
		07180		06825
Total Distribution Rate		$0 36110		$0 35185

Details of Analysis of Expenses and Return on Investment

Direct Expenses:		Total	Allocated to W. Va.
General Expenses and Taxes—(Prorating):			
Total (to Prorate)		$839,829	
Production Expense	$1,222,378	62 20%	
Transmission "	462,647	23 54%	
Distribution "	280,140	14 26%	
Total	$1,965,165	100 00%	
Proportion Overheads:			
To Production System		$522,353	
To Transmission "		197,716	
To Distribution "		119,720	
Total Overheads		$839,829	

UEBELACKER EXHIBIT No. 5—Continued

Production Expense:

Direct Expense:	Total	Allocated to W. Va.
Superintendence	$7,354	
Operating Wells and Lines	114,104	
Production Tools and Supplies	9,651	
Field Measuring Stations	17,424	
Lease hold Expense	48,702	
Rentals on Unoperated Leases	628,523	
Well Royalties	192,247	
Cancelled and Surrendered Leases	233	
Miscellaneous and Insurance	50,146	
Changing Construction	9,473	
Repairs to Wells	121,406	
Repairs to Field Lines	24,147	
Field Measuring Stations	4,263	
Total	$1,227,673	
Less Gas used in own operation	5,295	
Total	$1,222,378	
Proportion of General Overheads	522,393	
Gas Purchased	619,263	
Total	$2,364,034	
Less Depletable Item	9,473	
Total Production Expense	$2,354,561	
Dividing this total by Total Sales of 47,040,235 M. C. F., results in Unit per M. C. F. of		$0.05005

[fol. 837] Transmission Expense:

Direct Expense:

Superintendence	$4,672	
Transmission Lines, Operation	32,703	
Transmission Tools and Supplies	2,878	
Compressing Stations, Operation	381,692	
Measuring Stations, Operation	9,620	
Miscellaneous and Insurance	9,400	
Changing Construction	8,720	
Transmission Lines, Maintenance	43,777	
Compressing Stations, "	104,913	
Measuring Station, "	1,709	
Total	$600,084	
Less Gas used in own operation	137,437	
Total	$462,647	
Proportion of General Overheads	197,716	
Total Transmission Expense	$660,363	
		$580,087

Dividing this Total by Total Sales Less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F. of $0 01270

UEBELACKER EXHIBIT NO. 5—Continued

Depreciation:	Total	Allocated to W. Va.
Production System—Amount of Annual Depreciation (Basis does not include any property considered depletable):		
Gas Well Structures (Deteriorated Value)	$4,520	
Field Measuring Station Structures	246	
Other Production System Structures	5,588	
Field Line Construction	46,826	
" " Equipment	102,285	
Field Measuring Station Equipment	1,625	
Drilling and Cleaning Equipment (Deteriorated Value)	21,423	
Other Production System Equipment	1,652	
Overheads (Partial Engineering and Interest)	15,654	
Total Annual Depreciation	$199,819	
This total divided by Total Sales of 47,040,235 M.C.F., results in Unit per M.C.F. of		$0.00425

[fol. 838] Transmission System—Amount of Annual Depreciation:

	West Virginia Allocated to
Compressing Station Structures	$10,860
Measuring Station Structures	110
Other Transmission System Structures	8,399
Compressing Station Equipment	162,088

Transmission Line Equipment	334,407
Other Transmission System Equipment	1,177
Overheads (Partial Engineering and Interest)	51,704
	$568,745
This total divided by Total Sales less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F.	$0 01246
General Property—Amount of Annual Depreciation:	
General Office Structures	$1,834
General Office Equipment	2,125
General Shop Equipment	1,805
General Stable Equipment	1,080
General Telephone and Telegraph Equipment	10,211
General Tools and Implements	1,459
Overheads (Partial Engineering and Interest)	1,851
Total Annual Depreciation	$20,365
This total divided by Total Sales of 47,040,235 M. C. F., results in Unit per M. C. F.	$0 00043

UEBELACKER EXHIBIT NO. 5—Continued

[fol. 839] Return on Investment at 8% :	Allocated to W. Va	
	New	Less deterioration
Production System—Valuation	$47,459,219	$46,577,096
Amount of Return	3,796,738	3,726,168
Divided by Total Sales of 47,040,235 M. C. F., results in Unit per M. C. F. of	0 08071	0 07921
Transmission System—Valuation	15,416,207	13,090,258
Amount of Return	1,233,297	1,047,221
Divided by Total Sales less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F. of	0 02701	0 02294
General Property—Valuation	621,578	546,251
Amount of Return	49,726	43,701
Divided by Total Sales of 47,040,235 M. C. F., results in Unit per M. C. F. of	0 00106	0 00093
Working Capital—Production System	683,475	683,475
Amount of Return	54,678	54,678
Divided by Total Sales of 47,040,235 M. C. F., results in Unit per M. C. F. of	0 00116	0 00116
Working Capital—Transmission System	167,711	167,711
Amount of Return	13,417	13,417
Divided by Total Sales less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F.	0 00029	0 00029

Amortization (Annual Amount to be Amortized)	Allocated to West Virginia
Leaseholds—Proven Acreage	$1,868,524
Divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	0 039972
Leaseholds—Unproven Acreage	299,432
Divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	0 00637
Production System Plant not Depletable	186,441
Divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	0 00396
Transmission System	692,894
Divided by Total Sales less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F.	0 01518
General Property (Balance not applicable to Dist. Sys.)	14,597
Divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	0 00032
[fol. 840] Depletion	$1,582,266
Divided by Total Sales of 47,040,235 M. C. F., results in Unit per M. C. F.	0 03363

Ubbelaeder Exhibit No. 5—Continued

Distribution:	Total	Allocated to W. Va.
Direct Expense:		
Superintendence	$4,286	
Operating Lines	25,506	
Connecting and Disconnecting Meters	31,269	
Electrolysis	16	
Shop Expense	8,143	
Miscellaneous and Insurance	2,902	
Changing Construction	25,172	
Lines and Regulators, Maintenance	20,771	
Meters and House Regulators, Maintenance	23,289	
Services, Maintenance	17,840	
Reading Meters	22,228	
Salaries of Office Force and Collectors	82,501	
Rent, Heat, Light, Telephone Rentals and Tools	9,759	
Stationery and Supplies	7,549	
Miscellaneous and Insurance	203	
Total	$281,434	
Less Gas used in own operation	1,294	
Total	$280,140	
Proportion of General Overheads	119,720	
Total Distribution Expense	$399,860	$281,208

Dividing this total by Sales through Distribution Plants of 10,593,248 M. C. F., results in Unit per M. C. F.	$0 02655

[fol. 841] Depreciation (Annual amount of Depreciation):

Direct Property:	Allocated to West Virginia
District Regulator Structures	$933
Other Distribution System Structures	897
Gas Receivers and District Regulators	1,496
Distribution Line Equipment	38,874
Service Line Equipment	11,562
Meters	10,631
Meter Installations	6,666
Other Distribution System Equipment	303
Overheads (Partial Engineering and Interest)	7,850
	$79,212
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00748
General Property Applicable to Distribution System	$9,138
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00086

UEBELACKER EXHIBIT No. 5—Continued

	Allocated to W. Va.	
	New	Less deterioration
Return on Investment:		
Direct Property—Valuation	$2,835,719	$2,380,622
Amount of Return	226,858	190,450
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 02142	0 01798
General Property—Valuation	184,641	169,558
Amount of Return	14,771	13,565
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00139	0 00128
Working Capital	85,000	85,000
Amount of Return	6,800	6,800
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00064	0 00064
		Allocated to West Virginia
[fol. 842] Amortization (Annual Amount to be Amortized):		
Direct Property (Deteriorated Value)		$140,722
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.		0 01328
General Property (Deteriorated Value)		1,895
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.		0 00018

[fol. 843] United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales Year 1923, Actual Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Return at 10 per Cent

	Cost per M reproduction new		Cost per M less observed deterioration	
Expense:				
Production	$0 05005		$0 05005	
Transmission	01270		01270	
		$0 06275		$0 06275
Depreciation:				
Production	00425		00425	
Transmission	01246		01246	
General (Less General in Distribution)	00043		00043	
		01714		01714
Return:				
Production	10089		09902	
Transmission	03377		02867	
General (Less General in Distribution)	00132		00116	
Working Capital—Production	00145		00145	
" " —Transmission	00037		00037	
		13780		13067

Uebelacker Exhibit No. 5—Continued

	Cost per M reproduction new		Cost per M less observed deterioration	
Amortization:				
Proven Acreage	03972		03972	
Unproven Acreage	00637		00637	
Production System (Plant not Depletable)	00396		00396	
Transmission System	01518		01518	
General Property	00032		00032	
		06555		06555
Depletion		03363		03363
Total City Gate Rate		$0 31687		$0 30974
Distribution:				
Expense	02655		02655	
Depreciation—Distribution Property	00748		00748	
" —General Property	00086		00086	
Return—Distribution Property	02677		02247	
" —General Property	00174		00160	
" —Working Capital	00080		00080	
Amortization—Distribution Property	01328		01328	
" —General Property	00018		00018	
		07766		07322
Total Distribution Rate		$0 39453		$0 38296

[fol. 844] United Fuel Gas Company, Inc.

Details of Analysis of Expenses and Return on Investment

Direct Expenses:

General Expenses and Taxes—(Prorating):		Total	Allocated to W. Va.
Total (to Prorate)		$839,829	
Production Expense	$1,222,378	62.20%	
Transmission "	462,647	23.54%	
Distribution "	280,140	14.26%	
Total	$1,965,165	100.00%	
Proportion Overheads:			
To Production System		$522,393	
To Transmission "		197,716	
To Distribution "		119,720	
Total Overheads		$839,829	

Production Expense:

Direct Expense:	Total	Allocated to W. Va
Superintendence	$7,354	
Operating Wells and Lines	114,104	
Production Tools and Supplies	9,651	
Field Measuring Stations	17,424	
Leasehold Expense	48,702	
Rentals on Unoperated Leases	628,523	
Well Royalties	192,247	
Cancelled and Surrendered Leases	233	
Miscellaneous and Insurance	50,146	
Changing Construction	9,473	
Repairs to Wells	121,406	
Repairs to Field Lines	24,147	
Field Measuring Stations	4,263	
Total	$1,229,673	
Less Gas used in own operation	5,295	
Total	$1,222,378	
Proportion of General Overheads	522,393	
Gas Purchased	619,263	
Total	$2,364,034	

Less Depletable Item	9,473	
Total Production Expense	$2,354,561	
Dividing this total by Total Sales of 47,040,235 M. C. F., results in Unit per M. C. F. of		$0.05005

[fol. 845] Transmission Expense:

Direct Expense:		
Superintendence	$4,672	
Transmission Lines, Operation	32,703	
Transmission Tools and Supplies	2,878	
Compressing Stations, Operation	381,692	
Measuring Stations, Operation	9,620	
Miscellaneous and Insurance	9,400	
Changing Construction	8,720	
Transmission Lines, Maintenance	43,777	
Compressing Stations, "	104,913	
Measuring Stations, "	1,709	
Total	$600,084	
Less Gas used in own operation	137,437	
Total	$462,647	

Uebelacker Exhibit No. 5—Continued

	Total	Allocated to W. Va.
Proportion of General Overheads	197,716	
Total Transmission Expense	$660,363	
		$580,087
Dividing this Total by Total Sales Less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F. of		$0.01270
Depreciation:		
Production System—Amount of Annual Depreciation (Basis does not include any property considered depletable):		
Gas Well Structures (Deteriorated Value)	$4,520	
Field Measuring Station Structures	246	
Other Production System Structures	5,588	
Field Line Construction	46,826	
" " Equipment	102,285	
Field Measuring Station Equipment	1,625	
Drilling and Cleaning Equipment (Deteriorated Value)	21,423	
Other Production System Equipment	1,652	
Overheads (Partial Engineering and Interest)	15,654	
Total Annual Depreciation	$199,819	
This total divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F. of		$0.00425

[fol. 846] Transmission System—Amount of Annual Depreciation:

	Allocated to West Virginia
Compressing Station Structures	$10,860
Measuring Station Structures	110
Other Transmission System Structures	8,399
Compressing Station Equipment	162,088
Transmission Line Equipment	334,407
Other Transmission System Equipment	1,177
Overheads (Partial Engineering and Interest)	51,704
	$568,745
This total divided by Total Sales less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F.	$0 01246

General Property—Amount of Annual Depreciation:

General Office Structures	$1,834
General Office Equipment	2,125
General Shop Equipment	1,805
General Stable Equipment	1,080
General Telephone and Telegraph Equipment	10,211
General Tools and Implements	1,459
Overheads (Partial Engineering and Interest)	1,851
Total Annual Depreciation	$20,365
This total divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	$0 00043

UEBELACKER EXHIBIT No. 5—Continued

[fol. 847] Return on Investment at 10%:	Allocated to W. Va. New	Allocated to W. Va. Less deterioration
Production System—Valuation	$47,459,219	$46,577,096
Amount of Return	4,745,922	4,657,710
Divided by Total Sales of 47,040,235 M.C.F., results in Unit per M. C. F. of	0 10089	0 09902
Transmission System—Valuation	15,416,207	13,090,258
Amount of Return	1,541,621	1,309,026
Divided by Total Sales less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F. of	0 03377	0 02867
General Property—Valuation	621,578	546,281
Amount of Return	62,158	54,628
Divided by Total Sales of 47,040,235 M.C.F., results in Unit per M. C. F. of	0 00132	0 00116
Working Capital—Production System	683,475	683,475
Amount of Return	68,348	68,348
Divided by Total Sales of 47,040,235 M.C.F., results in Unit per M. C. F. of	0 00145	0 00145
Working Capital—Transmission System	167,711	167,711
Amount of Return	16,771	16,771
Divided by Total Sales less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F.	0 00037	0 00037

Amortization (Annual Amount to be Amortized):	Allocated to West Virginia
Leaseholds—Proven Acreage	$1,868,524
Divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	0 039972
Leaseholds—Unproven Acreage	299,432
Divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	0 00637
Production System Plant not Depletable	186,441
Divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	0 00396
Transmission System	692,894
Divided by Total Sales less Field Sales of 45,656,128 M. C. F., results in Unit per M. C. F.	0 01518
General Property (Balance not applicable to Dist. Sys.)	14,597
Divided by Total Sales of 47,040,235 M.C. F., results in Unit per M. C. F.	0 00032
[fol. 848] Depletion	$1,582,266
Divided by Total Sales of 47,040,235 M. C. F., results in Unit per M. C. F.	0 03363

Uebelacker Exhibit No. 5—Continued

Distribution:

Direct Expense:	Total	Allocated to W. Va.
Superintendence	$4,286	
Operating Lines	25,506	
Connecting and Disconnecting Meters	31,269	
Electrolysis	16	
Shop Expense	8,143	
Miscellaneous and Insurance	2,902	
Changing Construction	25,172	
Lines and Regulators, Maintenance	20,771	
Meters and House Regulators, Maintenance	23,289	
Services, Maintenance	17,840	
Reading Meters	22,228	
Salaries of Office Force and Collectors	82,501	
Rent, Heat, Light, Telephone Rentals and Tools	9,759	
Stationery and Supplies	7,549	
Miscellaneous and Insurance	203	
Total	$281,434	
Less Gas used in own operation	1,294	
Total	$280,140	
Proportion of General Overheads	119,720	
Total Distribution Expenses	$399,860	$281,208
Dividing this total by Sales through Distribution Plants of 10,593,248 M. C. F., results in Unit per M. C. F.		$0.02655

[fol. 849] Depreciation (Annual amount of Depreciation):

Direct Property:	Allocated to West Virginia
District Regulator Structures	$933
Other Distribution System Structures	897
Gas Receivers and District Regulators	1,496
Distribution Line Equipment	38,874
Service Line Equipment	11,562
Meters	10,631
Meter Installations	6,666
Other Distribution System Equipment	303
Overheads (Partial Engineering and Interest)	7,850
	$79,212
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00748
General Property Applicable to Distribution System	$9,138
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00086

Uebelacker Exhibit No. 5—Continued

	Allocated to W. Va.	
Return on Investment:	New	Less deterioration
Direct Property—Valuation	$2,835,719	$2,380,622
Amount of Return	283,572	238,062
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 02677	0 02247
General Property—Valuation	184,641	169,558
Amount of Return	18,464	16,956
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00174	0 00160
Working Capital	85,000	85,000
Amount of Return	8,500	8,500
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00080	0 00080

	Allocated to West Virginia
[fol. 850] Amortization (Annual Amount to be Amortized):	
Direct Property (Deteriorated Value)	$140,722
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 01328
General Property (Deteriorated Value)	1,895
Divided by Sales of 10,593,248 M. C. F., results in Unit per M. C. F.	0 00018

[fol. 851]

United Fuel Gas Company, Inc.

Revenue Expenses and Return on Investment

Revenue and Expenses Year 1923, Actual

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

West Virginia Distribution

Revenue:	No. of consumers	Average consumption per domestic consumer (C. F.)	Quantity of gas sold (M. C. F.)	Average at 1923 rates		Total revenue
Domestic	32,566	178,589	5,811,644	21.39¢		$1,243,145
Industrial	68		4,781,604	18.93¢		904,957
Total Gas Earnings			10,593,248			$2,148,102
Miscellaneous Income						7,373
Total Gross Income						$2,155,475
Expense:						
Production					$530,237	
Transmission					134,593	
Distribution					281,208	
Total					$946,038	

UEBELACKER EXHIBIT No. 5—Continued

Depreciation:		
Production	$44,998	
Transmission	131,962	
Distribution	79,212	
General (Distribution)	9,138	
General (Balance)	4,586	
Total	$269,896	
Amortization:		
Proven Acreage	$420,783	
Unproven "	67,431	
Productive System (Plant not Depletable)	41,986	
Transmission System	160,767	
Distribution System	140,722	
General Property (Distribution System)	1,895	
General Property (Balance)	3,287	
Total	$836,871	
Depletion	356,319	
Total Operating Expense		2,409,124
Net Income		$253,649*

[fol. 852]

Valuation:	Reproduction new	Less observed deterioration
Production	$10,687,603	$10,488,952
Transmission	3,576,904	3,037,232
Distribution	2,835,719	2,380,622
General (Distribution)	184,641	169,558
General (Balance)	139,977	123,013
Working Capital—Production	153,915	153,915
Working Capital—Transmission	38,913	38,913
Working Capital—Distribution	85,000	85,000
Total Valuation	$17,702,672	$16,477,205
Per Cent Return on Valuation	1 433%*	1 539%*

[* Red in copy.]

[fols. 853 & 854] UEBELACKER EXHIBIT NO. 5A

United Fuel Gas Company, Incorporated

West Virginia Distribution

Analyses of Expenses and Return on Investment per M. C. F. and in Total

Allocated to Domestic and Industrial Business on Basis of Maximum Demand

Expenses and Sales, Year 1923, Actual

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration

[fol. 855] United Fuel Gas Company, Inc.

Notes on Analysis of Expenses and Return on Investment Maximum Demand Basis

Allocation on Demand Responsibility:

Expenses, (except production expenses) depreciation, amortization (except leaseholds and natural gas rights) and depletion charges, return on investment and valuation of property, going to make up the city gate rate, have been allocated to the domestic business and industrial business in proportion to the maximum demand of each. The maximum demand responsibility of each has been measured by the quantity of gas taken in West Virginia by the domestic and industrial consumers in the four coldest three-day periods in the years 1922, 1923 and January 1924. This results in 75 per cent of the above being charged to domestic business and 25 per cent to industrial business. Production expenses and amortization of leaseholds and natural gas rights have been allocated on basis of gas sales.

Distribution charges have been allocated upon the basis of estimated cost of service to the domestic and industrial consumers respectively. This estimate results in 90 per cent of distribution charges being made to domestic business and 10 per cent to industrial business.

The amounts which have been allocated in accordance with the above are the same as shown in the details to statements entitled Analyses of Expenses and Return on Investment per M. C. F. and in Total; Expenses and Sales, Year 1923, Actual; Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration.

[fol. 856] United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales Year 1923, Actual Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales, West Virginia Distribution—Return at 8 per cent

	Domestic		Industrial	
Expense:	New	Cost per M less deterioration	New	Cost per M less deterioration
Production	$0 05005	$0 05005	$0 05005	$0 05005
Transmission	01737	01737	00704	00704
Total	06742	06742	05709	05709
Depreciation:				
Production	00581	00581	00235	00235
Transmission	01703	01703	00690	00690
General (Less General in Distribution)	00059	00059	00024	00024
Total	02343	02343	00949	00949

UEBELACKER EXHIBIT No. 5A—Continued

	Domestic		Industrial	
Return:	New	Cost per M less deterioration	New	Cost per M less deterioration
Production	03693	03135	01496	01270
Transmission	11034	10829	04470	04387
General (Less General in Distribution)	00145	00127	00059	00051
Working Capital—Production	00159	00159	00064	00064
" " —Transmission	00040	00040	00016	00016
Total	15071	14290	06105	05788
Amortization:				
Proven Acreage	03972	03972	03972	03972
Unproven "	00637	00637	00637	00637
Production System (Plant not Depletable)	00542	00542	00220	00220
Transmission "	02075	02075	00841	00841
General Property	00042	00042	00017	00017
Total	07268	07268	05687	05687
Depletion	04598	04598	01863	01863
Total City Gate Rate	$0 39922	$0 35241	$0 20313	$0 19996

Distribution:

Expense	04355	04355	00588	00588
Depreciation—Distribution Property	01227	01227	00166	00166
" —General "	00142	00142	00019	00019
Return —Distribution "	03513	02949	00474	00398
" —General "	00229	00210	00031	00028
" —Working Capital	00105	00105	00014	00014
Amortization—Distribution Property	02179	02179	00294	00294
" —General "	00029	00029	00004	00004
Total	$0 11779	$0 11196	$0 01590	$0 01511
Total Distribution Rate	$0 47801	$0 46437	$0 21903	$0 21507

[fol. 857]

Return at 10 per Cent

Expense:

Production	$0 05005	$0 05005	$0 05005	$0 05005
Transmission	01737	01737	00704	00704
Total	06742	06742	05709	05709

Ebbelacker Exhibit No. 5a—Continued

	Domestic		Industrial	
Depreciation:	New	Cost per M less deterioration	New	Cost per M less deterioration
Production	00581	00581	00235	00235
Transmission	01703	01703	00690	00690
General (Less General in Distribution)	00059	00059	00024	00024
Total	02343	02343	00949	00949
Return:				
Production	13793	13536	05588	05484
Transmission	04616	03920	01870	01588
General (Less General in Distribution)	00181	00159	00073	00064
Working Capital—Production	00199	00199	00080	00080
" " —Transmission	00050	00050	00020	00020
Total	18839	17864	07631	07236
Amortization:				
Proven Acreage	03972	03972	03972	03972
Unproven "	00637	00637	00637	00637
Production System (Plant not Depletable)	00542	00542	00220	00220

Transmission "	02075	02075	00841	00841
General Property	00942	00942	00017	00017
Total	07268	07268	05687	05687
Depletion	04598	04598	01863	01863
Total City Gate Rate	$0 39790	$0 38815	$0 21839	$0 21444
Distribution:				
Expense	04355	04355	00588	00588
Depreciation—Distribution Property	01227	01227	00166	00166
" —General "	00142	00142	00019	00019
Return —Distribution "	04391	03687	00593	00498
" —General "	00286	00263	00039	00035
" —Working Capital	00132	00132	00018	00018
Amortization—Distribution Property	02179	02179	00294	00294
" —General "	00029	00029	00004	00004
Total	$0 12741	$0 12014	$0 01721	$0 01622
Total Distribution Rate	$0 52531	$0 50829	$0 23560	$0 23066

Ueberlacker Exhibit No. 5a—Continued

[fol. 856]

United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

Revenue and Expenses, Year 1923, Actual

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales

West Virginia Distribution

	No. of consumers	Average consumption per consumer per year (M c. f.)	Quantity of gas sold (M c. f.)	Average at 1923 rates	Domestic		Industrial	
Revenue					Revenue		Revenue	
Domestic	32,500	178.500	5,811,644	21.39¢	$1,243,145			
Industrial	68		4,781,994	18.95¢				$904,957
Miscellaneous Income					7,373			
Total Income			10,593,248		$1,250,518			$904,957
Expenses:								
Production					$578,867		$230,340	
Transmission					100,945		33,648	
Distribution					253,087		28,121	
Total					$944,929		$301,109	

Depreciation			
Production	$33,749		$11,249
Transmission	98,972		32,990
Distribution	71,291		7,921
General—Distribution System	8,224		914
" —Balance	3,440		1,146
Total	$215,676		$54,220
Amortization:			
Proven Acreage	$230,849		$180,934
Unproven Acreage	30,904		30,437
Production System (Plant not Depletable)	31,490		10,496
Transmission "	120,575		40,192
Distribution "	120,959		14,072
General Property—Distribution System	1,706		189
" —Balance	2,165		822
Total	$550,729		$286,142
Depletion	207,259		83,080
Total Operating Expense		$1,013,073	$730,551
Net Income		$108,055*	$171,406

[*Red in copy.]

Uebelacker Exhibit No. 5a—Continued

[fol. 859]

United Fuel Gas Company, Inc.

Revenue, Expenses and Return on Investment

Revenue and Expenses, Year 1923, Actual

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Allocation Based Upon Maximum Demand Responsibility of Domestic and Industrial Sales

West Virginia Distribution (Concluded)

Valuation:	Domestic		Industrial	
	New	Less observed deterioration	New	Less observed deterioration
Production	$8,015,702	$7,866,714	$2,671,901	$2,622,238
Transmission	2,682,678	2,277,924	894,226	759,308
Distribution	2,552,147	2,142,560	283,572	238,062
General—Distribution System	196,177	152,602	18,464	16,956
" —Balance	104,983	92,260	34,994	30,753
Working Capital—Production	115,436	115,436	38,479	38,479
" " —Transmission	29,185	29,185	9,728	9,728
" " —Distribution	76,500	76,500	8,500	8,500
Total Valuation	$13,742,808	$12,753,181	$3,959,864	$3,724,024
Per Cent Return on Valuation	3 115%*	3 356%*	4 404%	4 683%

[*Red in copy]

[fols. 860 & 861] UEBELACKER EXHIBIT No. 6

United Fuel Gas Company, Incorporated

West Virginia Distribution

Analyses of Expenses and Return on Investment per M C. F. and in Total

Expenses and Sales, Year 1923, Actual

Adjusted by Deduction of 3% of Expenses and Property Handling Natural Gas with Gasoline Content

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration

[fol. 862] United Fuel Gas Company, Inc.

Notes on Analyses of Expenses and Return on Investment

Gasoline Allowance:

Allowance has been made for the use of natural gas property by the gasoline extraction business. This allowance is taken as 3 per cent of (a) all Production System Expenses and Property with accompanying charges for depreciation, amortization and return; (b) Transmission System Pipe Line Expenses and Property with accompanying charges based upon that part of the system located East of Ona Gasoline Station, South of Sandyville Gasoline Station and that part located in the Triple State (Kermit) Field; and (c) all Compressing Station Expenses and Property with accompanying charges. No deduction has been taken with regard to Leaseholds and Natural Gas Rights, valuation or amortization, because this value is based upon gas from which the gasoline has been removed.

Otherwise, Expenses and Sales are as shown by Company financial statements for year 1923.

Warfield Natural Gas Co. and Cabin Creek Gas Co. expenses and sales (except intercompany) have been consolidated with United Fuel Gas Co. Allowance has been made for general expenses applicable to Cabin Creek Gas Co. oil and gasoline operations. Allocation of general expenses

to Virginian Gasoline and Oil Co. have been accepted as accurate as made by Company.

[fol. 863] Depreciation:

Depreciation has been determined for each class of material by applying percentage rates determined for each class. Basis is Estimated Cost of Reproduction New except as noted in Production System.

Amortization:

Amortization of Proven Acreage is based upon the depletion of gas content at the value per M C. F. fixed in Valuation Report as of December 31, 1923. Amortization of Unproven acreage is based upon the average length of time which the Company has held unproven acreage before abandoning it.

Amortization of Physical Property has been based upon the Deteriorated value of the Property which the Company will not be able to salvage.

Depletion:

Depletion has been based upon the depletable value of wells and field lines as set forth in Valuation Report as of December 31, 1923.

Return:

In every calculation of return the deteriorated value only of Gas Wells has been used.

Allocation to West Virginia:

Production System units have been considered on basis of total gas sold.

[fol. 864] Transmission System Expenses, Depreciation, Amortization and Return on Investment have been allocated to West Virginia on basis of gas sales, except where pipe lines are concerned. In the case of pipe lines the allocation has been made on the basis of miles of main located in West Virginia and Kentucky, excluding the section of Kentucky extending North and West from the State line

along the Ohio River. This system has been considered as handling all gas sold except field sales. The balance of the system in Kentucky and the system in Ohio have been considered as handling only the gas sold along the Ohio River in Kentucky and in Ohio. In other words, the gas sold in the last named section is considered as having been handled twice.

Distribution System property and expenses are as actually located or segregated in the various distribution plants.

Working Capital is allocated on the basis of expenses incurred in operating the plant in each state and system.

[fol. 863] UEBELACKER EXHIBIT No. 6

United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales, Year 1923, Actual Valuation Basis: Estimated Cost of Reproduction New Less Observed Deterioration as of December 31, 1923

Return at 8 per Cent

Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

	Cost per M reproduction new		Cost per M less observed deterioration	
Expense:				
Production	$0 04855		$0 04855	
Transmission	01241		01241	
		$0 06096		$0 06096
Depreciation:				
Production	00412		00412	
Transmission	01220		01220	
General (Less General in Distribution)	00042		00042	
		01674		01674
Return:				
Production	08015		07870	
Transmission	02644		02246	
General (Less General in Distribution)	00103		00090	

Working Capital—Production	00113		00113	
" " —Transmission	00029		00029	
		10904		10348
Amortization:				
Proven Acreage	03972		03972	
Unproven "	00637		00637	
Production System (Plant not Depletable)	00396		00396	
Transmission "	01518		01518	
General Property	00031		00031	
		06554		06554
Depletion		03263		03263
Total City Gate Rate		$0 28491		$0 27935
Distribution:				
Expense	02655		02655	
Depreciation—Distribution Property	00748		00748	
" —General Property	00086		00086	
Return—Distribution Property	02142		01798	
" —General Property	00139		00128	
" —Working Capital	00054		00064	
Amortization—Distribution Property	01328		01328	
" —General Property	00018		00018	
		07180		06825
Total Distribution Rate		$0 35671		$0 34760

UEBELACKER EXHIBIT No. 6—Continued

[fol. 866]

United Fuel Gas Company, Inc.
Details of Analysis of Expenses and Return on Investment

	Total	Allocated to W. Va.
Production Expense:		
Total Expenses	$2,354,561	
Less 3% for Gasoline Operations	70,637	
Balance	$2,283,924	$2,283,924
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0.04855
Transmission Expense:		
Transmission Lines and Compressing Stations Expense (Handling Wet Gas)		$451,041
Balance		129,046
Total		$580,087
Less 3% for Gasoline Operations		13,531
Balance		$566,556
Dividing this balance by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.		0.01241

Depreciation (Annual Amount of Depreciation):	
Production System	$199,819
Less 3% for Gasoline Operations	5,995
Balance	$193,824
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M C. F.	0 00412
Transmission System—Transmission Lines and Compressing Stations (Handling Wet Gas)	$396,026
Balance	172,719
Total	$568,745
Less 3% for Gasoline Operations	11,881
Balance	$556,864
Dividing this balance by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.	0 01220
[fol. 867] General Property not applicable to Dist. System	$20,365
Less 3% for Gasoline Operations	611
Balance	$19,754
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.	0.00042

UEBELACKER EXHIBIT No. 6—Continued

	Allocated to W. Va.	
	New	Less deterioration
Return on Investment at 8%:		
Production System—Leasehold:		
Valuation	$36,449,176	$36,449,176
Amount of Return	2,915,934	2,915,934
Production System—Balance	11,010,043	10,127,920
Amount of Return	880,803	810,234
Total Amount of Return	$3,796,737	$3,726,168
Less 3% for Gasoline Operations	26,424	24,307
Balance	$3,770,313	$3,701,861
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.	0.08015	0.07870
Transmission System:		
Transmission Lines and Compressing Station (Handling Wet Gas) Valuation	$10,811,962	$9,156,604
Amount of Return	864,957	732,528
Balance	4,604,245	3,933,654
Amount of Return	368,341	314,693
Total Return	$1,233,298	$1,047,221

Less 3% for Gasoline Operations	25,949	21,976
Balance	$1,207,349	$1,025,245
Dividing this balance by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.	0.02644	0.02246
[fol. 868] General Property (not applicable to Dist. System)	$621,578	$546,251
Amount of Return	49,726	43,701
Less 3% for Gasoline Operations	1,492	1,311
Balance	$48,234	$42,390
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.	0.00103	0.00090
Working Capital—Production System	$683,475	$683,475
Amount of Return	54,678	54,678
Less 3% for Gasoline Operations	1,640	1,640
Balance	$53,038	$53,038
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.	0.00113	0.00113

UEBELACKER EXHIBIT No. 6—Continued

	Total	Allocated West Va.
Working Capital—Transmission System Transmission Lines and Compressing Station (Handling Wet Gas)	$130,395	$130,395
Amount of Return	10,432	10,432
Balance	37,316	37,316
Amount of Return	2,985	2,985
Total Return	$13,417	$13,417
Less 3% for Gasoline Operations	313	313
Balance	$13,104	$13,104
Dividing this balance by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.	0.00029	0.00029
[fol. 862] Amortization (Annual Amount to be Amortized):		
Leaseholds—Proven Acreage		$1,868,524
Dividing this amount by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0.03972
Leaseholds—Unproven Acreage		299,432
Dividing this amount by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0.00637
Production System (Plant not Depletable)		186,441
Dividing this amount by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F		0.00396

Transmission System		692,894
Dividing this amount by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.		0.01518
General Property (Less General in Distribution)		14,597
Dividing this amount by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0.00031
Depletion:		
Total amount of annual depletion		$1,582,266
Less 3% for Gasoline Operations		47,468
Balance		$1,534,798
Dividing this balance by total sales of 47,040,235 M. C. F. results in unit per M. C. F.		0.03263
Distribution:		
Total Expense	$399,860	281,208
Divided by Sales through Distribution Plants of 10,593,248 M. C. F. results in unit per M. C. F.		0.02655
[fol. 870] Depreciation (Annual Amount of Depreciation):		
Direct Property		$79,212
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.		0.00748
General Property (applicable to Dist. System).		9,138
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.		0.00086

UEBELACKER EXHIBIT NO. 6—Continued

	Allocated to W. Va	
Return on Investment at 8%:	New	Less deterioration
Direct Property Valuation	$2,835,719	$2,380,622
Amount of Return	226,858	190,450
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	0.02142	.01798
General Property Valuation	184,641	169,558
Amount of Return	14,771	13,565
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	0.00139	0.00128
Working Capital	85,000	85,000
Amount of Return	6,800	6,800
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	.00064	.00064
Amortization (Annual Amount to be Amortized):		
Direct Property	140,722	
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	0.01328	
General Property (applicable to Dist. System)	1,895	
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	0.00018	

Analysis of Expenses and Return on Investment Based on Expenses and Sales, Year 1923, Actual Valuation Basis: Estimated Cost of Reproduction New Less Observed Deterioration as of December 31, 1923

Return at 10 per Cent

Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

	Cost per M reproduction new		Cost per M less observed deterioration	
Expense:				
Production	$0 04855		$0 04855	
Transmission	01241		01241	
		$0 06096		$0 06096
Depreciation:				
Production	00412		00412	
Transmission	01220		01220	
General (Less General in Distribution)	00042		00042	
		01674		01674
Return:				
Production	10019		09837	
Transmission	03306		02807	
General (Less General in Distribution)	00128		00113	
Working Capital—Production	00141		00141	
" " —Transmission	00036		00036	
		13630		12934

Ubbelacker Exhibit No. 6—Continued

	Cost per M reproduction new		Cost per M less observed deterioration	
Amortization:				
Proven Acreage	03972		03972	
Unproven "	00637		00637	
Production System (Plant not Depletable)	00396		00396	
Transmission "	01518		01518	
General Property	00031		00031	
		06554		06554
Depletion		03263		03263
Total City Gate Rate		$0 31217		$0 30521
Distribution:				
Expense	02655		02655	
Depreciation—Distribution Property	00748		00748	
" —General Property	00086		00086	
Return—Distribution Property	02677		02247	
" —General Property	00174		00160	
" —Working Capital	00080		00080	
Amortization—Distribution Property	01328		01328	
" —General Property	00018		00018	
		07766		07322
Total Distribution Rate		$0 38983		$0 37843

Uebelacker Exhibit No. 6a—Continued

[fol. 872]

United Fuel Gas Company, Inc.

Details of Analysis of Expenses and Return on Investment

	Total	Allocated to W. Va.
Production Expense:		
Total Expenses	$2,354,561	
Less 3% for Gasoline Operations	70,637	
Balance	$2,283,924	$2,283,924
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0.04855
Transmission Expense:		
Transmission Lines and Compressing Stations Expense (Handling Wet Gas)		$451,041
Balance		129,046
Total		$580,087
Less 3% for Gasoline Operations		13,531
Balance		$566,556

UEBELACKER EXHIBIT No. 6a—Continued

Dividing this balance by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.	0 01241
Depreciation (Annual Amount of Depreciation):	
Production System	$199,819
Less 3% for Gasoline Operations	5,995
Balance	$193,824
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.	0 00412
Transmission System—Transmission Lines and Compressing Stations (Handling Wet Gas)	$396,026
Balance	172,719
Total	$568,745
Less 3% for Gasoline Operations	11,881
Balance	556,864
Dividing this balance by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.	0 01220

[fol. 873] General Property not applicable to Dist. System.		$20,365
Less 3% for Gasoline Operations		611
Balance		$19,754
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0.00042

Return on Investment at 10%:	Allocated to W. Va.	
Production System—Leasehold:	New	Less Deterioration
Valuation	$36,449,176	$36,449,176
Amount of Return	3,644,918	3,644,918
Production System—Balance	11,010,043	10,127,920
Amount of Return	1,101,004	1,012,792
Total Amount of Return	$4,745,922	$4,657,710
Less 3% for Gasoline Operations	33,030	30,384
Balance	$4,712,892	$4,627,326
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.	.10019	0.09837

UEBELACKER EXHIBIT No. 6—Continued

	Allocated to W. Va.	
Transmission System:	New	Less deterioration
Transmission Lines and Compressing Station (Handling Wet Gas) Valuation	$10,811,962	$9,156,604
Amount of Return	1,081,196	915,660
Balance	4,604,245	3,933,654
Amount of Return	460,425	393,366
Total Return	$1,541,621	$1,309,026
Less 3% for Gasoline Operations	32,436	27,470
Balance	$1,509,185	$1,281,556
Dividing this balance by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F	0.03306	.02807
[fol. 874] General Property (not applicable to Dist. System)	$621,578	$546,251
Amount of Return	62,158	54,625
Less 3% for Gasoline Operations	1,865	1,639
Balance	$60,293	$52,986
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.	0 00128	0 00113

Working Capital—Production System	$683,475	$683,475
Amount of Return	68,348	68,348
Less 3% for Gasoline Operations	2,050	2,050
Balance	$66,298	$66,298
Dividing this balance by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.	0 00141	0 00141
Working Capital—Transmission System:		
Transmission Lines and Compressing Station (Handling Wet Gas)	$130,395	$130,395
Amount of Return	13,039	13,039
Balance	37,316	37,316
Amount of Return	3,732	3,732
Total Return	$16,771	$16,771
Less 3% for Gasoline Operations	391	391
Balance	$16,380	$16,380
Dividing this balance by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.	0 00036	0 00036

Uebelacker Exhibit No. 6—Continued

[fol. 875]

Amortization (Annual Amount to be Amortized):	Total	Allocated to W. Va.
Leaseholds—Proven Acreage		$1,868,524
Dividing this amount by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0 03972
Leaseholds—Unproven Acreage		299,432
Dividing this amount by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0 00637
Production System (Plant not Depletable)		186,441
Dividing this amount by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0 00396
Transmission System		692,894
Dividing this amount by Total Sales less Field Sales of 45,656,128 M. C. F. results in unit per M. C. F.		0 01518
General Property (Less General in Distribution)		14,597
Dividing this amount by Total Sales of 47,040,235 M. C. F. results in unit per M. C. F.		0 00031
Depletion:		
Total amount of annual depletion		$1,582,266
Less 3% for Gasoline Operations		47,468
Balance		$1,534,798

Dividing this balance by Total Sales of 47040,235 M. C. F. results in unit per M. C. F.		0 03263
Distribution:		
Total Expense	$399,860	$281,208
Divided by Sales through Distribution Plants of 10,593,248 M. C. F. results in unit per M. C. F.		0 02655
[fol. 876] Depreciation (Annual Amount of Depreciation):		
Direct Property		79,212
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.		0 00748
General Property (applicable to Dist. System)		9,138
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.		0 00086

Uebelacker Exhibit No. 6—Continued

	Allocated to W. Va.	
	New	Less deterioration
Return on Investment at 10%:		
Direct Property Valuation	$2,835,719	$2,380,622
Amount of Return	283,572	238,062
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	0 02677	0 02247
General Property Valuation	184,641	169,558
Amount of Return	18,464	16,956
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	0 00174	00160
Working Capital	85,000	85,000
Amount of Return	8,500	8,500
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	00080	00080
Amortization (Annual Amount to be Amortized):		
Direct Property	140,722	
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	0 01328	
General Property (applicable to Dist. System)	1,895	
Divided by Sales of 10,593,248 M. C. F. results in unit per M. C. F.	0 00018	

Revenue, Expense, and Return on Investment. Revenue as Indicated, Expense, Year 1923, Actual

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

West Virginia Distribution

Revenue	Consumers No. of	Average consumption per consumer (M c. f.)	Quantity of gas sold (M c. f.)	Average present rates	Revenue
Domestic	32 566	178 5	5,811,644	21 39¢	$1,243,145
Industrial	68		4,781,604	18 93¢	904,957
Total Gas Earnings			10,593,248		$2,148,102
Miscellaneous Income					7,373
Total Gross Income					$2,155,475

UEBELACKER EXHIBIT No. 6—Continued

Expense:	
Production	$514,329
Transmission	131,454
Distribution	281,208
Total	$926,991
Depreciation:	
Production	$43,648
Transmission	129,205
Distribution	79,212
General—Distribution	9,138
" —Balance	4,449
Total	$265,652
Amortization:	
Proven Acreage	$420,783
Unproven "	67,431
Production System (Plant not Depletable)	41,986
Transmission "	160,767
Distribution "	140,722

General Property (Distribution System)	1,895	
" " (Balance)	3,287	
Total	$836,871	
Depletion	345,630	
Total Operating Expense		2,375,144
Net Income:		$219,669*

[fol. 878] Valuation:

	New	Less observed deterioration
Production	$10,613,220	$10,420,529
Transmission	3,501,645	2,973,496
Distribution	2,835,719	2,380,622
General—Distribution	184,641	169,558
" —Balance	135,777	119,323
Working Capital—Production	149,298	149,298
" " —Transmission	38,005	38,005
" " —Distribution	85,000	85,000
Total Valuation	$17,543,305	$16,335,831
Per Cent Return on Valuation	1 252%*	1 345%*

[*Red in copy.]

[fols. 879 & 880] UEBELACKER EXHIBIT No. 6A

United Fuel Gas Company, Incorporated

West Virginia Distribution

Analyses of Expenses and Return on Investment per M C. F. and in Total

Allocated to Domestic and Industrial Business on Basis of Maximum Demand

Expenses and Sales, Year 1923, Actual

Adjusted by Deduction of 3% of Expenses and Property Handling Natural Gas With Gasoline Content

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration

[fol. 881] United Fuel Gas Company, Inc.

Notes on Analyses of Expenses and Return on Investment Maximum Demand Basis

Allocation on Demand Responsibility:

Expenses, (except production expenses), depreciation, amortization (except leaseholds and natural gas rights) and depletion charges, return on investment and valuation of property, going to make up the city gate rate, have been allocated to the domestic business and industrial business in proportion to the maximum demand of each. The maximum demand responsibility of each has been measured by the quantity of gas taken in West Virginia by the domestic and industrial consumers in the four coldest three-day periods in the years 1922, 1923 and January 1924. This results in 75 per cent of the above being charged to domestic business and 25 per cent to industrial business. Production expenses and amortization of leaseholds and natural gas rights have been allocated on basis of gas sales.

Distribution charges have been allocated upon the basis of estimated cost of service to the domestic and industrial

consumers respectively. This estimate results in 90 per cent of distribution charges being made to domestic business and 10 per cent to industrial business.

The amounts which have been allocated in accordance with the above are the same as shown in the details to statements entitled Analyses of Expenses and Return on Investment per M C. F. and in Total; Expenses and Sales, Year 1923, Actual; Adjusted by deduction of 3 per cent of expenses and property handling natural gas with gasoline content.

[fol. 882] UEBELACKER EXHIBIT No. 6A—Continued

United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales, Year 1923, Actual Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales

West Virginia Distribution—Return at 8 per Cent

	Domestic		Industrial	
Expense:	New	Cost per M less deterioration	New	Cost per M less deterioration
Production	$0 04855	$0 04855	$0 04855	$0 04855
Transmission	01696	01696	00687	00687
Total	06551	06551	05542	05542
Depreciation:				
Production	00563	00563	00228	00228
Transmission	01667	01667	00676	00676

General (Less General in Distribution)	00057	00057	00023	00023
Total	02287	02287	00927	00927
Return:				
Production	10957	10758	04439	04358
Transmission	03615	03070	01465	01244
General (Less General in Distribution)	00140	00123	00057	00050
Working Capital—Production	00154	00154	00062	00062
" " —Transmission	00039	00039	00016	00016
Total	14905	14144	06039	05730
Amortization:				
Proven Acreage	03972	03972	03972	03972
Unproven "	00637	00637	00637	00637
Production System (Plant not Depletable)	00542	00542	00220	00220
Transmission "	02075	02075	00841	00841
General Property	00042	00042	00017	00017
Total	07268	07268	05687	05687
Depletion	04460	04460	01807	01807
Total City Gate Rate	$0 35471	$0 34710	$0 20002	$0 19693

UEBELACKER EXHIBIT No. 6a—Continued

	Domestic		Industrial	
	New	Cost per M less deterioration	New	Cost per M less deterioration
Distribution:				
Expense	04355	04355	00588	00588
Depreciation—Distribution Property	01227	01227	00166	00166
" —General "	00142	00142	00019	00019
Return —Distribution "	03513	02949	00474	00398
" —General "	00229	00210	00031	00028
" —Working Capital	00105	00105	00014	00014
Amortization—Distribution Property	02179	02179	00294	00294
" —General "	00029	00029	00004	00004
Total	$0 1779	$0 11196	$0 01590	$0 01511
Total Distribution Rate	$0 47250	$0 45906	$0 21592	$0 21204
[fol. 883] Expense:				
Production	$0 04855	$0 04855	$0 04855	$0 04855
Transmission	01696	01696	00687	00687
Total	06551	06551	05542	05542
Depreciation:				
Production	00563	00563	00228	00228
Transmission	01667	01667	00676	00676

General (Less General in Distribution)	00057	00057	00023	00023
Total .	02287	02287	00927	00927
Return:				
Production	13697	13448	05549	05448
Transmission	04519	03830	01831	01555
General (Less General in Distribution)	00175	00154	00071	00062
Working Capital—Production	00193	00193	00078	00078
" " —Transmission	00049	00049	00020	00020
Total .	18633	17674	07549	07163
Amortization:				
Proven Acreage	03972	03972	03972	03972
Unproven "	00637	00637	00637	00637
Production System (Plant not Depletable)	00542	00542	00220	00220
Transmission "	02075	02075	00841	00841
General Property	00042	00042	00017	00017
Total .	07268	07268	05687	05687
Depletion .	04460	04460	01807	01807
Total City Gate Rate	$0 39199	$0 38240	$0 21512	$0 21126

UEBELACKER EXHIBIT No. 6A—Continued

	Domestic		Industrial	
Distribution:	New	Cost per M less deterioration	New	Cost per M less deterioration
Expense	04355	04355	00588	00588
Depreciation—Distribution Property	01227	01227	00166	00166
" —General "	00142	00142	00019	00019
Return —Distribution "	04391	03687	00593	00498
" —General "	00286	00263	00039	00035
" —Working Capital	00132	00132	00018	00018
Amortization—Distribution Property	02179	02179	00294	00294
" —General "	00029	00029	00004	00004
Total	$0 12741	$0 12014	$0 01721	$0 01622
Total Distribution Rate	$0 51940	$0 50254	$0 23233	$0 22748

United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

Revenue as Indicated, Expenses, Year 1923, Actual

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

Allocation Based upon Maximum Demand and Responsibility of Domestic and Industrial Sales

West Virginia Distribution

	No. of consumers	Average consumption per consumer (c. f.)	Quantity of gas sold (M c. f.)	Average at 1923 rates	Domestic		Industrial	
						Revenue		Revenue
Revenue:								
Domestic	32,566	178,500	5,811,644	21.3¢	.....	$1,243,145	.....	.....
Industrial	68	.....	4,781,604	18.9¢	.....	.....	.....	$904,957
Miscellaneous Income	.....	.....	.....	.....	.....	7,373	.....	.....
Total Income			10,593,248	.....	.....	$1,250,518	.....	$904,957
Expense:								
Production						$282,170		$232,159
Transmission						98,590		32,863
Distribution						253,087		28,121
Total						$633,848		$293,143

Uebelacker Exhibit No. 6a—Continued

Depreciation:				
Production	$32,726		$10,912	
Transmission	96,804		32,301	
Distribution	71,291		7,921	
General—Distribution System	8,224		914	
" —Balance	3,337		1,112	
Total	$212,492		$53,160	
Amortization:				
Proven Acreage	$239,849		$189,934	
Unproven Acreage	56,564		30,437	
Production System (Plant not Depletable)	31,490		10,496	
Transmission "	120,575		40,192	
Distribution "	120,650		14,072	
General Property—Distribution System	1,705		190	
" —Balance	2,495		822	
Total	$550,728		$286,143	
Depletion	259,223		$86,407	
Total Operating Expense		$1,056,291		$718,853
Net Income		$405,773*		$186,104

[*Red in copy.]

[fol. 885]

United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

Revenue as Indicated, Expenses, Year 1923, Actual

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

Allocation Based upon Maximum Demand and Responsibility of Domestic and Industrial Sales

West Virginia Distribution

	Domestic		Industrial	
Valuation:	New	Less observed deterioration	New	Less observed deterioration
Production	$7,959,915	$7,815,397	$2,653,305	$2,605,132
Transmission	2,626,234	2,230,122	875,411	743,374
Distribution	2,552,147	2,142,560	283,572	238,062
General—Distribution System	166,177	152,602	18,464	16,956
" —Balance	101,833	89,492	33,944	29,831
Working Capital—Production	111,974	111,974	37,324	37,324
" " —Transmission	28,504	28,504	9,501	9,501
" " —Distribution	76,500	76,500	8,500	8,500
Total Valuation	$13,623,284	$12,647,151	$3,920,021	$3,688,680
Per Cent Return on Valuation	*2 978%	*3 208%	4 747%	5 045%

[*Red in copy.]

[fols. 886 & 887] UEBELACKER EXHIBIT No. 7

United Fuel Gas Company, Incorporated

West Virginia Distribution

Analyses of Expenses and Return on Investment per M C. F. and in Total

Expenses and Sales, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration

[fol. 888] United Fuel Gas Company, Inc.

Notes on Analyses of Expenses and Return on Investment

Rates:

Rates used are as shown in Schedule of Rates for Natural Gas (P. S. C., W. Va. No. 4) effective May 31, 1924.

Expenses and Sales:

Allowance has been made for the decline in domestic consumption per consumer which it is estimated will result from increased rates. No change has been considered in Industrial consumption due to increases in rates. The reduction in consumption has been assumed as a reduction in gas purchased, no other expenses have been affected. Expenses and sales are otherwise as shown by Company financial statements for year 1923.

Warfield Natural Gas Co. and Cabin Creek Gas Co. expenses and sales (except intercompany) have been consolidated with United Fuel Gas Co. Allowance has been made for general expenses applicable to Cabin Creek Gas Co. oil and gasoline operations. Allocation of general expenses to Virginian Gasoline & Oil Co. have been accepted as accurate as made by Company.

Depreciation:

Depreciation has been determined for each class of material by applying percentage rates determined for each class. Basis is Estimated Cost of Reproduction New except as noted in Production System.

[fol. 889] Amortization:

Amortization of Proven Acreage is based upon the depletion of gas content at the value per M C. F. fixed in Valuation Report as of December 31, 1923. Amortization of Unproven Acreage is based upon the average length of time during which the Company has held unproven acreage before abandoning it.

Amortization of Physical Property has been based upon the Deteriorated value of the Property which the Company will not be able to salvage.

Depletion:

Depletion has been based upon the depletable value of wells and field lines as set forth in Valuation Report as of December 31, 1923.

Return:

In every calculation of return the deteriorated value only of Gas Wells has been used.

Allocation to West Virginia:

Production System units have been considered on basis of total gas sold.

Transmission System Expenses, Depreciation, Amortization and Return on Investment have been allocated to West Virginia on basis of gas sales, except where pipe lines are concerned. In the case of pipe lines the allocation has been made on the basis of miles of main located in West Virginia and Kentucky, excluding the section of Kentucky extending North and West from the State Line along the Ohio River. This System has been considered as handling all [fol. 890] gas sold except field sales. The balance of the system in Kentucky and the system in Ohio have been considered as handling only the gas sold along the Ohio River in Kentucky and in Ohio. In other words, the gas sold in the last named section is considered as having been handled twice.

Distribution System Property and expenses are as actually located or segregated in the various distribution plants.

Working Capital is allocated on the basis of expenses incurred in operating the plant in each State and system.

[fol. 891] UEBELACKER EXHIBIT No. 7—Continued

United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New Less Observed Deterioration as of December 31, 1923

Return at 8 per Cent

	Cost per M reproduction new		Cost per M less observed deterioration	
Expense:				
Production	$0.04938		$0.04938	
Transmission	.01328		.01328	
		$0.06266		$0.06266
Depreciation:				
Production	.00445		.00445	
Transmission	.01308		.01308	
General (Less General in Distribution)	.00045		.00045	
		.01798		.01798
Return:				
Production	.08461		.08303	
Transmission	.02836		.02408	
General (Less General in Distribution)	.00111		.00097	

Working Capital—Production	.00122		.00122	
" " —Transmission	.00031		.00031	
		.11561		.10961
Amortization:				
Proven Acreage	.04164		.04164	
Unproven Acreage	.00667		.00667	
Production System (Plant not Depletable)	.00415		.00415	
Transmission "	.01593		.01593	
General Property (Less General in Distribution)	.00033		.00033	
		.06872		.06872
Depletion:	.03526	.03526	.03526	.03526
Total City Gate Rate		$0.30023		$0.29423
Distribution:				
Expense	.03336		.03336	
Depreciation —Distribution Property	.00940		.00940	
" —General "	.00108		.00108	
Return —Distribution "	.02691		.02259	
" —General "	.00175		.00161	
" —Working Capital	.00081		.00081	
Amortization—Distribution Property	.01669		.01669	
" —General "	.00022		.00022	
		.09022		.08576
Total Distribution Rate		$0.39045		$0.37999

UEBELACKER EXHIBIT No. 7—Continued

[fol. 892]

United Fuel Gas Company, Inc.

Details of Analysis of Expenses and Return on Investment as Adjusted to Allow for Effect of Increased Rates

	Total	Allocated to W. Va.
Production Expense:		
Total Expenses	$2,354,561	
Less Reduction in Gas Purchased	138,599	
	$2,215,962	$2,215,962
Dividing this total by Total Sales of 44,875,983 M. C. F., results in unit per M. C. F. of		0 04938
Transmission Expense:		
Total Expense	$660,363	577,414
Dividing this total by Total Sales Less Field Sales of 43,491,876 M. C. F., results in unit per M. C. F.		0 01328
Depreciation (Annual Amount of Depreciation):		
Production System (Basis does not include any property considered depletable)		199,819
Dividing this total by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		0 00445
Transmission System		568,745

Dividing this amount by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F. of	0 01308
General Property—Less General in Distribution System	20,365
Dividing this amount by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	0.00045

[fol. 893] Return on Investment at 8%:

	Allocated to W. Va.	
	New	Less deterioration
Production System Valuation	$47,459,219	$46,577,096
Amount of Return.	3,796,738	3,726,168
Divided by Total Sales of 44,875,983 M. C. F. results in unit per M C. F. of	0 08461	0 08303
Transmission System Valuation	15,416,207	13,090,258
Amount of Return.	1,233,297	1,047,221
Divided by Total Sales of 43,491,876 M. C. F. results in unit per M. C. F. of	0 02836	0 02408
General Property (Less General in Distribution) Valuation .	621,578	546,251
Amount of Return	49,726	43,701
Divided by Total Ssles of 44,875,983 M. C. F. results in a unit per M C. F. of	0 00111	0 00097
Working Capital—Production System.	683,475	683,475
Amount of Return.	54,678	54,678
Divided by Total Sales Less Field Sales of 44,875,983 M C. F. results in a unit per M C. F. of	0 00122	0 00122

UEBELACKER EXHIBIT No. 7—Continued

	Allocated to W. Va.	
	New	Less deterioration
Working Capital—Transmission System	166,938	166,938
Amount of Return	13,355	13,355
Divided by Total Sales of 43,491,876 M. C. F results in a unit per M C. F. of	0 00031	0 00031

Amortization (Annual Amount to be Amortized):	Total	Allocated to W. Va.
[fol. 894] Leaseholds—Proven Acreage		$1,868,524
Divided by Total Sales of 44,875,983 M. C. F. results in a unit per M C. F. of		0 04164
Leaseholds—Unproven Acreage		299,432
Divided by Total Sales of 44,875,983 M. C. F. results in a unit per M C. F. of		0 00667
Production System—Plant not Depletable		186,441
Divided by Total Sales of 44,875,983 M. C. F. results in a unit per M C. F. of		0 00415
Transmission System		692,894
Divided by Total Sales less Field Sales of 43,491,876 M C. F. results in a unit per M C. F. of		0 01593
General Property (Less General in Distribution)		14,597
Divided by Total Sales of 44,875,983 M C. F. results in a unit per M C. F. of		0 00033

Depletion		1,582,266
Divided by Total Sales of 44,875,983 M. C. F. results in a unit per M C. F. of		0 03526
Distribution:		
Total Expense	$399,860	281,208
Divided by Sales through Distribution Plants of 8,428,996 M C. F. results in unit per M C. F.		0 03336
Depreciation (Annual Amount of Depreciation):		
Direct Property.		79,212
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of		0 00940
General Property		9,138
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of		0 00108
[fol. 895] Return on Investment at 8%:		
Direct Property Valuation	$2,835,719	$2,380,622
Amount of Return	226,858	190,450
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 02691	0 02259
General Property Valuation	184,641	169,558
Amount of Return	14,771	13,565
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 00175	0 00161
Working Capital	85,000	85,000
Amount of Return.	6,800	6,800
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 00081	0 00081

UEBELACKER EXHIBIT No. 7—Continued

Amortization (Annual Amount to be Amortized):	Total	Allocated to W. Va.
Direct Property (Deteriorated Value)	$140,722	
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 01669	
General Property (Deteriorated Value)	1,895	
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 00022	

[fol. 896] United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New Less Observed Deterioration as of December 31, 1923

Return at 10 per Cent

Expense:	Cost per M reproduction new		Cost per M less observed deterioration	
Production	$0.04938		$0.04938	
Transmission	.01328		.01328	
		$0.06266		$0.06266

Depreciation:				
Production	.00445		.00445	
Transmission	.01308		.01308	
General (Less General in Distribution)	.00045		.00045	
		.01798		.01798
Return:				
Production	.10576		.10379	
Transmission	.03544		.03010	
General (Less General in Distribution)	.00139		.00122	
Working Capital—Production	.00152		.00152	
" " —Transmission	.00038		.00038	
		.14449		.13701
Amortization:				
Proven Acreage	.04164		.04164	
Unproven Acreage	.00667		.00667	
Production System (Plant not Depletable)	.00415		.00415	
Transmission "	.01593		.01593	
General Property (Less General in Distribution)	.00033		.00033	
		.06872		.06872
Depletion	.03526	.03526	.03526	.03526
Total City Gate Rate		$0.32911		$0.32163

UEBELACKER EXHIBIT No. 7—Continued

Distribution:	Cost per M reproduction new		Cost per M less observed deterioration	
Expense	.03336		.03336	
Depreciation—Distribution Property	.00940		.00940	
" —General "	.00108		.00108	
Return —Distribution "	.03364		.02824	
" —General "	.00219		.00201	
" —Working Capital	.00101		.00101	
Amortization—Distribution Property	.01669		.01669	
" —General "	.00022		.00022	
		.09759		.09201
Total Distribution Rate		$0.42670		$0.41364

[fol. 897] United Fuel Gas Company, Inc.

Details of Analysis of Expenses and Return on Investment as Adjusted to allow for Effect of Increased Rates

Production Expense:	Total	Allocated to W. Va.
Total Expenses	$2,354,561	.....
Less Reduction in Gas Purchased	138,599	.....
	$2,215,962	$2,215,962

Dividing this total by Total Sales of 44,875,983 M C. F., results in unit per M C. F. of		0 04938
Transmission Expense:		
Total Expense	$660,363	577,414
Dividing this total by Total Sales Less Field Sales of 43,491,876 M C. F. results in unit per M C. F.		0 01328
Depreciation (Annual Amount of Depreciation):		
Production System (Basis does not include any property considered depletable)		199,819
Dividing this total by Total Sales of 44,875,983 M C. F. results in unit per M C. F. of		0 00445
Transmission System		568,745
Dividing this amount by Total Sales less Field Sales of 43,491,876 M C. F. results in unit per M C. F. of		0 01308
General Property—Less General in Distribution System		20,365
Dividing this amount by Total Sales of 44,875,983 M C. F. results in unit per M C. F. of		0 00045

[fol. 898] Return on Investment at 10%:

	Allocated to W. Va.	
	New	Less deterioration
Production System Valuation	$47,459,219	$46,577,096
Amount of Return	4,745,922	4,657,710

UEBELACKER EXHIBIT No. 7—Continued

	Allocated to W. Va.	
	New	Less deterioration
Divided by Total Sales of 44,875,983 M C. F. results in unit per M C. F. of	0 10576	0 10379
Transmission System Valuation	15,416,207	13,090,258
Amount of Return	1,541,621	1,309,026
Divided by Total Sales of 43,491,876 M C. F. results in unit per M C. F. of	0 03544	0 03010
General Property (Less General in Distribution) Valuation	621,578	546,251
Amount of Return	62,158	54,625
Divided by Total Sales of 44,875,983 M C. F. results in a unit per M C. F. of	0 00139	0 00122
Working Capital—Production System	683,475	683,475
Amount of Return	68,348	68,348
Divided by Total Sales Less Field Sales of 44,875,983 M C. F. results in a unit per M C. F. of	0 00152	0 00152
Working Capital—Transmission System	166,938	166,938
Amount of Return	16,694	16,694
Divided by Total Sales of 43,491,876 M C. F. results in a unit per M C. F. of	0 00038	0 00038

[fol. 899] Amortization (Annual Amount to be Amortized):	Total	Allocated West Va.
Leaseholds—Proven Acreage	.....	$1,868,524
Divided by Total Sales of 44,875,983 M C. F. results in a unit per M C. F. of	.....	0 04164

Leaseholds—Unproven Acreage		299,432
Divided by Total Sales of 44,875,983 M C. F. results in a unit per M C. F. of		0 00667
Production System—Plant not Depletable		186,441
Divided by Total Sales of 44,875,983 M C. F. results in a unit per M C. F. of		0 00415
Transmission System		692,894
Divided by Total Sales less Field Sales of 43,491,876 M C. F. results in a unit per M C. F. of		0 01593
General Property (Less General in Distribution)		14,597
Divided by Total Sales of 44,875,983 M C. F. results in a unit per M C. F. of		0 00033
Depletion		1,582,266
Divided by Total Sales of 44,875,983 M C. F. results in a unit per M C. F. of		0 03526
Distribution:		
Total Expense	$399,860	281,208
Divided by Sales through Distribution Plants of 8,428,996 M C. F. results in unit per M C. F.		0 03336
Depreciation (Annual Amount of Depreciation):		
Direct Property		79,212
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of		0 00940
General Property		9,138
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of		0 00108

UEBELACKER EXHIBIT No. 7—Continued

[fol. 900] Return on Investment at 10%:	Allocated to W. Va. New	Allocated to W. Va. Less deterioration
Direct Property Valuation	$2,835,719	$2,380,622
Amount of Return	283,572	238,062
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 03364	0 02824
General Property Valuation	$184,641	$169,558
Amount of Return	18,464	16,956
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 00219	0 00201
Working Capital	85,000	85,000
Amount of Return	8,500	8,500
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 00101	0 00101

Amortization (Annual Amount to be Amortized):	Total	West Va. Allocated to
Direct Property (Deteriorated Value)	$140,722	.....
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 01669	.....
General Property (Deteriorated Value)	1,895	.....
Divided by Sales of 8,428,996 M C. F. results in unit per M C. F. of	0 00022	.....

[fol. 901]

United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

Revenue as Indicated, Expenses, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

West Virginia Distribution

	No. of consumers	Average consumption per consumer (C. F.)	Quantity of gas sold (M C. F.)	Rate per M C. F.		Revenue
Revenue:						
Domestic	32,566	112,000	3,647,392	38.49¢ (av.)		$1,404,027
Industrial	68	.....	4,781,604	23.41¢ (")		1,119,552
Total Gas Earnings			8,428,996			$2,523,579
Miscellaneous Income						7,500
Total Gross Income						$2,531,079
Expense:						
Production					$416,222	
Transmission					111,906	
Distribution					281,208	
Total					$809,336	

UEBELACKER EXHIBIT No. 7—Continued

Depreciation:		
Production	$37,532	
Transmission	110,226	
Distribution	79,212	
General Property (Distribution System)	9,138	
" " (Balance)	3,825	
Total	$239,933	
Amortization:		
Proven Acreage	$350,963	
Unproven "	56,242	
Production System (Plant not Depletable)	35,019	
Transmission "	134,287	
Distribution "	140,722	
General Property (Distribution System)	1,895	
" " (Balance)	2,742	
Total	$721,870	
Depletion	297,195	
Total Operating Expense		2,068,334
Net Income		$462,745

[fol. 902]

Valuation:	New	Less observed deterioration
Production	$8,914,218	$8,748,529
Transmission	2,987,753	2,536,971
Distribution	2,835,710	2,380,622
General—Distribution System	184,641	169,558
" —Balance	116,750	102,602
Working Capital—Production	128,376	128,376
" " —Transmission	32,354	32,354
" " —Distribution	85,000	85,000
Total Valuation	$15,284,802	$14,184,012
Per Cent Return on Valuation	3.027%	3.262%

[fols. 903 & 904] UEBELACKER EXHIBIT No. 7A

United Fuel Gas Company, Incorporated

West Virginia Distribution

Analyses of Expenses and Return on Investment per M C. F. and in Total

Allocated to Domestic and Industrial Business on Basis of Maximum Demand

Expenses and Sales, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration

[fol. 905] United Fuel Gas Company, Inc.

Notes on Analyses of Expenses and Return on Investment Maximum Demand Basis

Allocation on Demand Responsibility:

Expenses (except production expenses), depreciation, amortization (except leaseholds and natural gas rights) and depletion charges, return on investment and valuation of property, going to make up the city gate rate, have been allocated to the domestic business and industrial business in proportion to the maximum demand of each. The maximum demand responsibility of each has been measured by the quantity of gas taken in West Virginia by the domestic and industrial consumers in the four coldest three-day periods in the years 1922, 1923 and January 1924. This results in 68 per cent of the above being charged to domestic business and 32 per cent to industrial business after considering the effect of increased rates on domestic consumption. Production expenses and amortization of leaseholds and natural gas rights have been allocated on basis of gas sales.

Distribution charges have been allocated upon the basis of estimated cost of service to the domestic and industrial consumers respectively. This estimate results in 90 per cent of distribution charges being made to domestic business and 10 per cent to industrial business.

The amounts which have been allocated in accordance with the above are the same as shown in the details attached [fol. 906] to statements entitled Analyses of Expenses and Return on Investment per M C. F. and in Total; Expenses and Sales, Year 1923, as adjusted to allow for effect of increased rates on domestic consumption in West Virginia.

[fol. 907] UEBELACKER EXHIBIT No. 7a—Continued

United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales, West Virginia Distribution

Return at 8 per Cent

	Domestic		Industrial	
	New	Cost per M less deterioration	New	Cost per M less deterioration
Expense:				
Production	$0.04938	$0.04938	$0.04938	$0.04938
Transmission	.02086	.02086	.00749	.00749
Total	.07024	.07024	.05687	.05687
Depreciation:				
Production	.00700	.00700	.00251	.00251
Transmission	.02055	.02055	.00738	.00738

General (Less General in Distribution)	.00071	.00071	.00026	.00026
Total	.02826	.02826	.01015	.01015
Return:				
Production	.13295	.13048	.04772	.04684
Transmission	.04456	.03783	.01600	.01358
General (Less General in Distribution)	.00174	.00153	.00063	.00055
Working Capital—Production	.00191	.00191	.00069	.00069
" " —Transmission	.00048	.00048	.00017	.00017
Total	.18164	.17223	.06521	.06183
Amortization (Deter. Value):				
Proven Acreage	.04164	.04164	.04164	.04164
Unproven "	.00667	.00667	.00667	.00667
Production System (Plant not Depletable)	.00653	.00653	.00234	.00234
Transmission	.02504	.02504	.00899	.00899
General Property	.00051	.00051	.00018	.00018
Total	.08039	.08039	.05982	.05982
Depletion	.05541	.05541	.01989	.01989
Total City Gate Rate	$0 41594	$0 40653	$0 21194	$0 20856

UEBELACKER EXHIBIT No. 7a—Continued

	Domestic		Industrial	
Distribution:	New	Cost per M less deterioration	New	Cost per M less deterioration
Expense	.06939	.06939	.00588	.00588
Depreciation—Distribution Property	.01955	.01955	.00166	.00166
" —General "	.00225	.00225	.00019	.00019
Return —Distribution "	.05598	.04699	.00474	.00398
" —General "	.00364	.00335	.00031	.00028
" —Working Capital	.00168	.00168	.00014	.00014
Amortization—Distribution Property	.03472	.03472	.00294	.00294
" —General "	.00047	.00047	.00004	.00004
Total	$0.18768	$0.17840	$0.01590	$0.01511
Total Distribution Rate	$0.60362	$0.58493	$0.22784	$0.22367
[fol. 908] Expense:				
Production	$0.04938	$0.04938	$0.04938	$0.04938
Transmission	.02086	.02086	.00749	.00749
Total	.07024	.07024	.05687	.05687

Depreciation:				
Production	.00700	.00700	.00251	.00251
Transmission	.02055	.02055	.00738	.00738
General (Less General in Distribution)	.00071	.00071	.00026	.00026
Total	.02826	.02826	.01015	.01015
Return:				
Production	.16619	.16310	.05966	.05855
Transmission	.05570	.04730	.01999	.01698
General (Less General in Distribution)	.00218	.00191	.00078	.00069
Working Capital—Production	.00239	.00239	.00086	.00086
" " —Transmission	.00060	.00060	.00022	.00022
Total	.22706	.21530	.08151	.07730
Amortization (Deter. Value):				
Proven Acreage	.04164	.04164	.04164	.04164
Unproven "	.00667	.00667	.00667	.00667
Production System (Plant not Depletable)	.00653	.00653	.00234	.00234
Transmission	.02504	.02504	.00899	.00899
General Property	.00051	.00051	.00018	.00018
Total	.08039	.08039	.05982	.05982
Depletion	.05541	.05541	.01989	.01989
Total City Gate Rate	$0.46136	$0.44960	$0.22824	$0.22403

UEBELACKER EXHIBIT No. 7a—Continued

Distribution:	Domestic		Industrial	
	New	Cost per M less deterioration	New	Cost per M less deterioration
Expense	.06939	.06939	.00588	.00588
Depreciation—Distribution Property	.01955	.01955	.00166	.00166
" —General "	.00225	.00225	.00019	.00019
Return —Distribution "	.06997	.05874	.00593	.00498
" —General "	.00456	.00418	.00039	.00035
" —Working Capital	.00210	.00210	.00018	.00018
Amortization—Distribution Property	.03472	.03472	.00294	.00294
" —General "	.00047	.00047	.00004	.00004
Total	$0.20301	$0.19140	$0.01721	$0.01622
Total Distribution Rate	$0.66437	$0.64100	$0.24545	$0.24025

[fol. 909] United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

Revenue as Indicated, Expenses Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia. Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

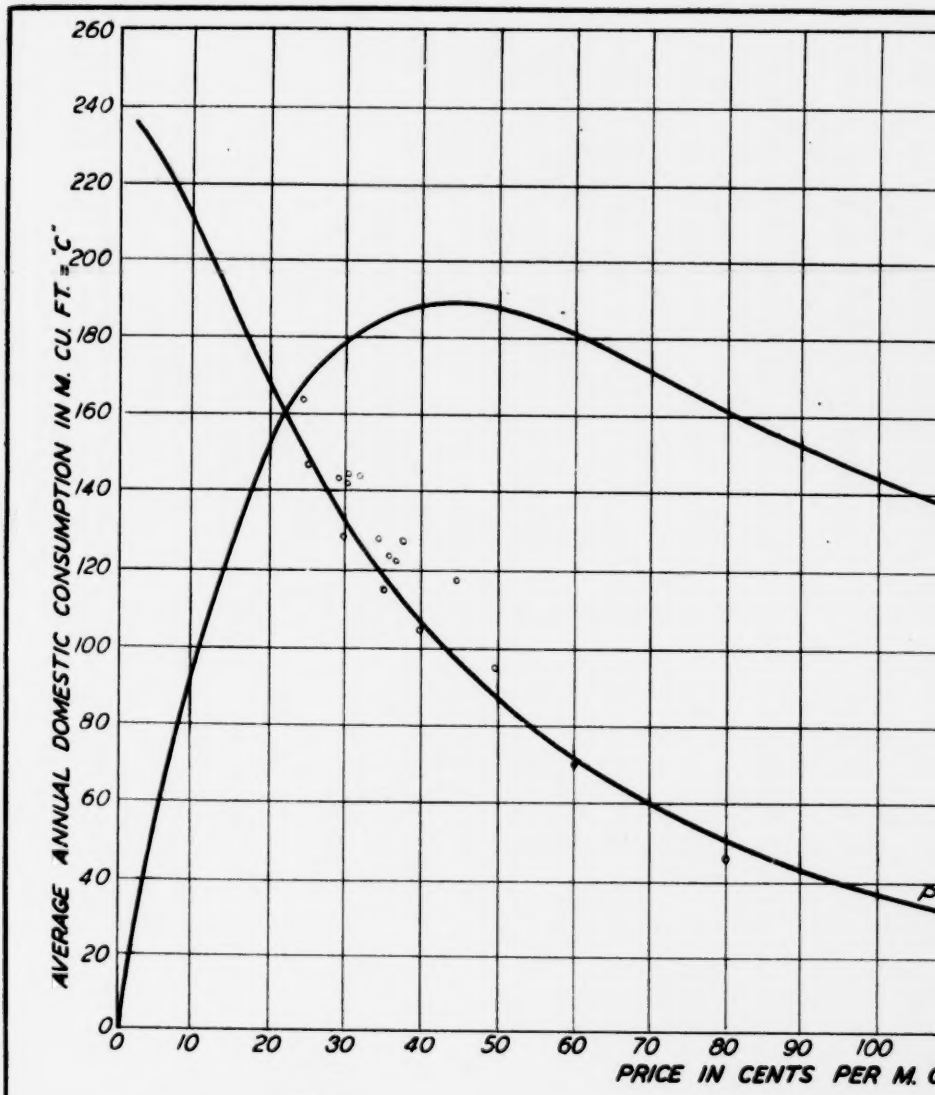
Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales

West Virginia Distribution

	No. of consumers	Average consumption per consumer (c. f.)	Quantity of gas sold (M c. f.)	Rates	Domestic Revenue	Industrial Revenue
Revenue:						
Domestic	32,566	112,000	3,647,392	38.49 (av.)	$1,404,027	
Industrial	68	.....	4,781,604	23.41 (av.)	.....	$1,119,552
Miscellaneous Income	.....	.....	.....	.....	7,500	.....
Total Income			8,428,996	.....	$1,411,527	$1,119,552
Expense:						
Production					$180,108	$236,114
Transmission					76,096	35,810
Distribution					253,087	28,121
Total					$509,291	$300,045

Uebelacker Exhibit No. 7a—Continued

	Domestic		Industrial	
Depreciation:		Revenue		Revenue
Production	$25,522		$12,010	
Transmission	74,954		35,272	
Distribution	71,291		7,921	
General—Distribution System	8,244		914	
" —Balance	2,601		1,224	
Total	$182,592		$57,341	
Amortization:				
Proven Acreage	$151,869		$199,094	
Unproven Acreage	24,337		31,905	
Production System (Plant not Depletable)	23,813		11,206	
Transmission "	91,315		42,972	
Distribution "	126,650		14,072	
General Property—Distribution	1,706		189	
" " —Balance	1,865		877	
Total	$421,555		$300,315	
Depletion	202,093		95,102	
Total Operating Expense		1,315,531		752,803
Net Income		$95,996		$366,749

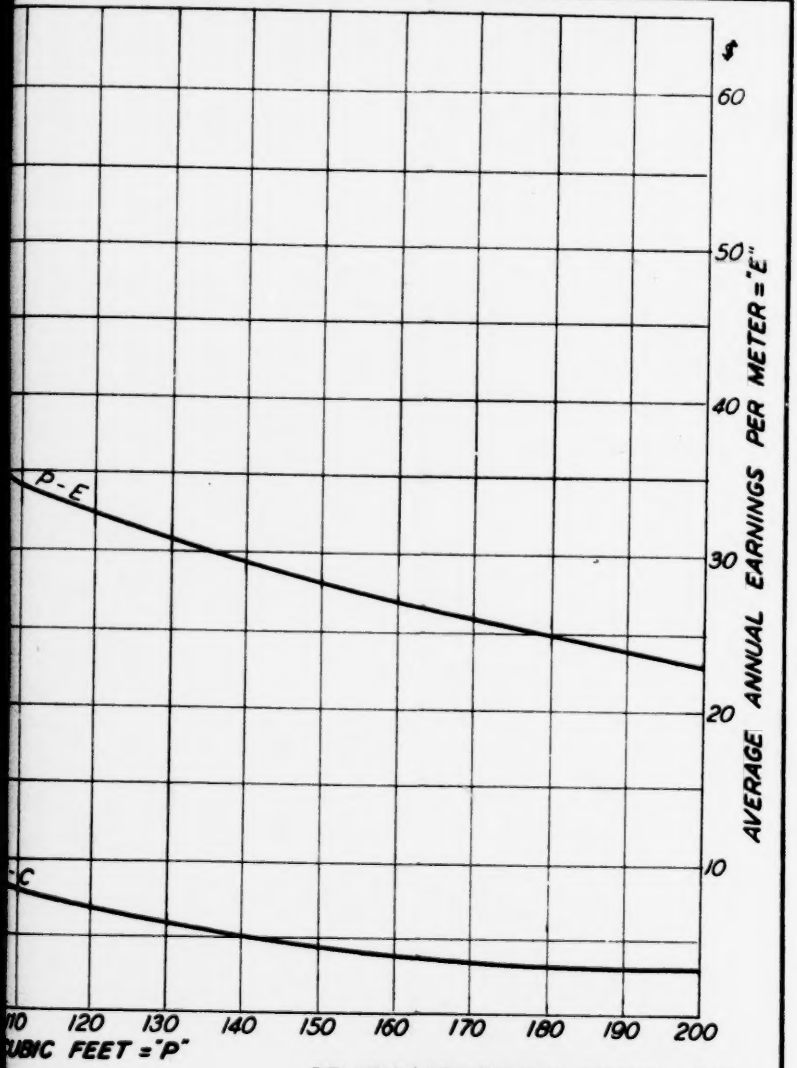


$$C = \frac{250}{1 + \left(\frac{P}{375}\right)^{10}} \qquad E = CP$$

Based on informati
Dominion Gas Co. of
East Ohio Gas Co. of Cle
Kansas City Gas Co. of

U. 550

UEBELACKER EX. Nº 7-B



RELATION OF DOMESTIC NATURAL GAS CONSUMPTION TO PRICE

n from
uffalo, N.Y.
eland, O. and
ansas City, Mo.

FORD, BACON & DAVIS
INCORPORATED
Engineers
NEW YORK
PHILADELPHIA - CHICAGO - SAN FRANCISCO

910-A

[fol. 910]

United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

30—439

Revenue, as Indicated, Expenses, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales West Virginia Distribution

	Domestic		Industrial	
Valuation:	New	Cost per M less deterioration	New	Cost per M less deterioration
Production	$6,061,668	$5,949,000	$2,852,550	$2,799,529
Transmission	2,031,672	1,725,140	856,081	811,831
Distribution	2,552,139	2,142,560	283,571	238,062
General—Distribution System	166,177	152,602	18,464	16,956
" —Balance	79,390	69,769	37,360	32,833
Working Capital—Production	87,296	87,296	41,080	41,080
" " —Transmission	22,001	22,001	10,353	10,353
" " —Distribution	76,500	76,500	8,500	8,500
Total Valuation	$11,076,843	$10,224,868	$4,207,959	$3,959,144
Per Cent Return on Valuation	.867%	.939%	8.716	9.263%

(Here follows Uelebacker Exhibit No. 7 B, marked side folio page 910a)

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[fols. 911 & 912] UEBELACKER EXHIBIT No. 8

United Fuel Gas Company Incorporated

West Virginia Distribution

Analyses of Expenses and Return on Investment per M C. F. and in Total

Expenses and Sales, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia, and Also Adjusted by Deduction of 3% of Expenses and Property Handling Natural Gas with Gasoline Content

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration

[fol. 913] United Fuel Gas Company, Inc.

Notes on Analyses of Expenses and Return on Investment

Rates:

Rates used are as shown in Schedule of Rates for Natural Gas (P. S. C., W. Va. No. 4) effective May 31, 1924.

Expenses and Sales:

Allowance has been made for the decline in domestic consumption per consumer which it is estimated will result from increased rates. No change has been considered in Industrial consumption due to increases in rates. The reduction in consumption has been assumed as a reduction in gas purchased, no other expenses have been affected.

Gasoline Allowance:

Allowance has been made for the use of natural gas property by the gasoline extraction business. This allowance is taken as 3 per cent of (a) all Production System Expenses and Property with accompanying charges for depreciation, amortization and return; (b) Transmission System Pipe Line Expenses and Property with accompanying charges based upon that part of the system located East

of Ona Gasoline Station, South of Sandyville Gasoline Station and that part located in the Triple State (Kermit) Field; and (c) all Compressing Station Expenses and Property with accompanying charges. No deduction has been taken with regard to Leaseholds and Natural Gas Rights, [fol. 914] valuation or amortization, because this value is based upon gas from which the gasoline has been removed.

Otherwise, Expenses and Sales are as shown by Company financial statements for year 1923.

Warfield Natural Gas Co. and Cabin Creek Gas Co. expenses and Sales (except intercompany) have been consolidated with United Fuel Gas Co. Allowance has been made for general expenses applicable to Cabin Creek Gas Co. oil and gasoline operations. Allocation of general expenses to Virginian Gasoline & Oil Co. have been accepted as accurate as made by Company.

Depreciation:

Depreciation has been determined for each class of material by applying percentage rates determined for each class. Basis is Estimated Cost of Reproduction New except as noted in Production System.

Amortization:

Amortization of Proven Acreage is based upon the depletion of gas content at the value per M C. F. fixed in Valuation Report as of December 31, 1923. Amortization of Unproven Acreage is based upon the average length of time during which the Company has held unproven acreage before abandoning it.

Amortization of Physical Property has been based upon the Deteriorated value of the Property which the Company will not be able to salvage.

[fol. 915] Depletion:

Depletion has been based upon the depletable value of wells and field lines as set forth in Valuation Report as of December 31, 1923.

Return:

In every calculation of return the deteriorated value only of Gas Wells has been used.

Allocation to West Virginia:

Production System units have been considered on basis of total gas sold.

Transmission System Expenses, Depreciation, Amortization and Return on Investment have been allocated to West Virginia on basis of gas sales, except where pipe lines are concerned. In the case of pipe lines the allocation has been made on the basis of miles of main located in West Virginia and Kentucky, excluding the section of Kentucky extending North and West from the State Line along the Ohio River. This system has been considered as handling all gas sold except field sales. The balance of the system in Kentucky and the system in Ohio have been considered as handling only the gas sold along the Ohio River in Kentucky and in Ohio. In other words, the gas sold in the last named section is considered as having been handled twice.

Distribution System property and expenses are as actually located or segregated in the various distribution plants.

Working Capital is allocated on the basis of expenses incurred in operating the plant in each State and system.

UEBELACKER EXHIBIT No. 8—Continued

[fol. 916] United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales Year 1923, as Adjusted to Allow for Effect Increased Rates on Domestic Consumption in West Virginia

Valuation Basis Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Return at 8 per Cent

Also Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

	Cost per M reproduction new		Cost per M less observed deterioration	
Expense:				
Production	$0.04790		$0.04790	
Transmission	.01300		.01300	
		$0.06090		$0.06090
Depreciation:				
Production	.00432		.00432	
Transmission	.01280		.01280	
General (Less General in Distribution)	.00044		.00044	
		.01756		.01756

UEBELACKER EXHIBIT No. 8—Continued

	Cost per M reproduction new		Cost per M less observed deterioration	
Return:				
Production	.08402		.08249	
Transmission	.02776		.02357	
General (Less General in Distribution)	.00107		.00094	
Working Capital—Production	.00118		.00118	
" " —Transmission	.00030		.00030	
		.11433		.10848
Amortization:				
Proven Acreage	.04164		.04164	
Unproven "	.00667		.00667	
Production System (Plant not Depletable)	.00415		.00415	
Transmission System	.01593		.01593	
General Property (Less General in Distribution)	.00033		.00033	
		.06872		.06872
Depletion		.03420		.03420
Total City Gate Rate		$0.29571		$0.28986
Distribution:				
Expense	.03336		.03336	
Depreciation—Distribution Property	.00940		.00940	
" —General Property	.00108		.00108	

Return—Distribution Property	.02691		.02259	
" —General Property	.00175		.00161	
" —Working Capital	.00081		.00081	
Amortization—Distribution Property	.01669		.01669	
" —General Property	.00022		.00022	
		.09022		.08576
Total Distribution Rate		$0.38593		$0.37562

[fol. 917] United Fuel Gas Company, Inc.

Details of Analysis of Expenses and Return on Investment Adjusted to Allow for Effect of Increased Rates and Also Adjusted for 3% Deduction for Gasoline Operation

Production Expenses:	Total	Allocated to W. Va.
Total Expenses	$2,254,561	
Less Reduction in Gas Purchased	138,599	
	$2,215,962	$2,215,962
Less 3% for Gasoline Operation		66,479
Balance		$2,149,483
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0.04790

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UEBELACKER EXHIBIT No. 8—Continued

	Allocated to W. Va.
Transmission Expenses:	
Trans. Lines and Comp. Stations (Handling Wet Gas)	$394,225
Balance (Handling Dry Gas)	183,189
Total	$577,414
Les 3% for Gasoline Operation	11,827
Balance	$565,587
Dividing this balance by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F.	$0.01300
Depreciation (Annual Amount of Depreciation):	
Production System	$199,819
Less 3% for Gasoline Operation	5,995
Balance	$193,824
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F.	$0.00432

[fol. 918]

Transmission System—Trans. Lines and Comp. Stations (Handling Wet Gas)	$396,026
Balance (Handling Dry Gas)	172,719
Total	$568,745
Less 3% for Gasoline Operation	11,881
Balance	$556,864
Dividing this balance by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F.	$0.01280
General Property (Less General in Distribution)	$20,365
Less 3% for Gasoline Operation	611
Balance	$19,754
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F.	$0.00044

UEBELACKER EXHIBIT No. 8—Continued

	Allocated to W. Va.	
	New	Less deterioration
Return on Investment at 8%:		
Production System—Leasehold Valuation	$36,449,176	$36,449,176
Amount of Return	2,915,934	2,915,934
Production System—Balance	11,010,043	10,127,920
Amount of Return	880,803	810,234
Total Return	$3,796,737	$3,726,168
Less 3% for Gasoline Operation	26,424	24,307
Balance	$3,770,313	$3,701,861
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	$0 08402	$0 08249

[fol. 919]

Transmission System—Trans. Lines and Comp. Stations (Handling Wet Gas)	$10,811,962	$9,156,604
Amount of Return	864,957	732,528
Balance Handling Dry Gas	4,604,245	3,933,654
Amount of Return	368,340	314,693
Total Return	$1,233,297	$1,047,221

Less 3% for Gasoline Operation	25,949	21,976
Balance	$1,207,348	$1,025,245
Dividing this balance by Total Sales of 43,491,876 M. C. F. results in unit per M. C. F. of	$0.02776	$0.02357
General Property (Less General in Distribution)	$621,578	$546,251
Amount of Return	49,726	43,701
Less 3% for Gasoline Operation	1,492	1,311
Balance	$48,234	$42,390
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	$0.00107	$0.00094
Working Capital—Production System	$683,475	$683,475
Amount of Return	54,678	54,678
Less 3% for Gasoline Operation	1,640	1,640
Balance	$53,038	$53,038
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	$0.00118	$0.00118

UEBELACKER EXHIBIT No. 8—Continued

	Allocated to W. Va.	
	New	Less deterioration
[fol. 920] Working Capital—Transmission System Trans. Lines and Comp. Stations (Handling Wet Gas)	$113,969	$113,969
Amount of Return	9,117	9,117
Balance (Handling Dry Gas)	52,969	52,969
Amount of Return	4,238	4,238
Total Amount of Return	$13,355	$13,355
Less 3% for Gasoline Operation	274	274
Balance	$13,081	$13,081
Dividing this balance by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F. of	$0.00030	$0 00030

Amortization (Annual Amount to be Amortized):	Total	Allocated to W. Va.
Leaseholds—Proven Acreage	.....	$1,868,524
Dividing this amount by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	.....	$0.04164
Leaseholds—Unproven Acreage	.....	$299,432
Dividing this amount by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	.....	$0 00667
Production System—Plant not Depletable	.....	$186,441

Dividing this amount by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0.00415
Transmission System		$692,894
Dividing this amount by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F. of		$0.01593
General Property (Less General in Distribution)		$14,597
Dividing this amount by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0.00033
[fol. 921] Depletion:		
Total Amount of Annual Amount of Depletion		$1,582,266
Less 3% for Gasoline Operation		47,468
Balance		$1,534,798
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0.03420
Total Expense	$399,860	$281,208
Distribution:		
Divided by Sales through Distribution Plants of 8,428,996 M. C. F. results in unit per M. C. F. of		$0.03336
Depreciation (Annual Amount of Depreciation) Direct Property		$79,212
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of		$0.00940
General Property		$9,138
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of		$0.00108

UEBELACKER EXHIBIT No. 8—Continued

	Allocated to W. Va.	
Return on Investment at 8%:	New	Less deterioration
Direct Property	$2,835,719	$2,380,622
Amount of Return	226,858	190,450
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	0 02691	0 02259
[fol. 922] General Property	$184,641	$169,558
Amount of Return	14,771	13,565
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	$0 00175	$0 00161
Working Capital	85,000	85,000
Amount of Return	6,800	6,800
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	0 00081	0 00081

	Total	Allocated to W. Va.
Amortization (Annual Amount of Amortization):		
Direct Property	$140,722	
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	0 01669	
General Property	1,895	
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	0 00022	

[fol. 923] United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales Year, 1923 as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923

Return at 10 per Cent

Also Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

Expense:	Cost per M reproduction new		Cost per M less observed deterioration	
Production	$0.04790		$0.04790	
Transmission	.01300		.01300	
		$0.06090		$0.06090
Depreciation:				
Production	.00432		.00432	
Transmission	.01280		.01280	
General (Less General in Distribution)	.00044		.00044	
		.01756		.01756

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UEBELACKER EXHIBIT No. 8—Continued

	Cost per M reproduction new		Cost per M less observed deterioration	
Return:				
Production	.10502		.10311	
Transmission	.03470		.02947	
General (Less General in Distribution)	.00134		.00118	
Working Capital—Production	.00148		.00148	
" " —Transmission	.00038		.00038	
		.14292		.13562
Amortization:				
Proven Acreage	.04164		.04164	
Unproven "	.00667		.00667	
Production System (Plant not Depletable)	.00415		.00415	
Transmission System	.01593		.01593	
General Property (Less General in Distribution)	.00033		.00033	
		.06872		.06872
Depletion		.03420		.03420
Total City Gate Rate		$0.32430		$0.31700
Distribution:				
Expense	.03336		.03336	
Depreciation—Distribution Property	.00940		.00940	
" —General Property	.00108		.00108	

Return—Distribution Property	.03364		.02824	
" —General Property	.00219		.00201	
" —Working Capital	.00101		.00101	
Amortization—Distribution Property	.01669		.01669	
" —General Property	.00022		.00022	
		.09759		.09201
Total Distribution Rate		$0 42189		$0 40901

[fol. 924] United Fuel Gas Company, Inc.

Details of Analysis of Expenses and Return to Investment Adjusted to Allow for Effect of Increased Rates, and Also Adjusted for 3% Deduction for Gasoline Operation

Production Expenses:	Total	Allocated to W. Va.
Total Expenses	$2,354,561	
Less Reduction in Gas Purchased	138,599	
	$2,215,962	$2,215,962
Less 3% for Gasoline Operation		66,479
Balance		$2,149,483
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0 04790

UEBELACKER EXHIBIT No. 8—Continued

	Allocated to W. Va.
Transmission Expenses:	
Trans. Lines and Comp. Stations (Handling Wet Gas)	$394,225
Balance (Handling Dry Gas)	183,189
Total	$577,414
Less 3% for Gasoline Operation	11,827
Balance	$565,587
Dividing this balance by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F.	$0 01300
Depreciation (Annual Amount of Depreciation):	
Production System	$199,819
Less 3% for Gasoline Operation	5,995
Balance	$193,824
Dividing this balance by Total Sales of 44,875,893 M. C. F. results in unit per M. C. F.	$0 00432
[fol. 925] Transmission System—Trans. Lines and Comp. Stations (Handling Wet Gas)	$396,026
Balance (Handling Dry Gas)	172,719
Total	$568,745

Less 3% for Gasoline Operation	11,881
Balance	$556,864
Dividing this balance by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F.	$0.01280
General Property (Less General in Distribution)	$20,365
Less 3% for Gasoline Operation	611
Balance	$19,754
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F.	$0.00044

Return on Investment at 10%:	Allocated to W. Va.	
	New	Less deterioration
Production System—Leasehold Valuation	$36,449,176	$36,449,176
Amount of Return	3,644,918	3,644,918
Production System—Balance	11,010,043	10,127,920
Amount of Return	1,101,004	1,012,792
Total Return	$4,745,922	$4,657,710
Less 3% for Gasoline Operation	33,030	30,384
Balance	$4,712,892	$4,627,326

UEBELACKER EXHIBIT No. 8—Continued

	Allocated to W. Va.	
	New	Less deterioration
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	$0 10502	$0 10311
[fol. 926] Transmission System—Trans. Lines and Comp. Stations (Handling Wet Gas)	$10,811,962	$9,156,604
Amount of Return	1,081,196	915,660
Balance Handling Dry Gas	4,604,245	3,933,654
Amount of Return	460,425	393,366
Total Return	$1,541,621	$1,309,026
Less 3% for Gasoline Operation	32,436	27,470
Balance	$1,509,185	$1,281,556
Dividing this balance by Total Sales of 43,491,876 M. C. F. results in unit per M. C. F. of	$0 03470	$0 02947
General Property (Less General in Distribution)	$621,578	$546,251
Amount of Return	62,158	54,625
Less 3% for Gasoline Operation	1,865	1,639
Balance	$60,293	$52,986

Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	$0 00134	$0 00118
Working Capital—Production System	$683,475	$683,475
Amount of Return	68,348	68,348
Less 3% for Gasoline Operation	2,050	2,050
Balance	$66,298	$66,298
Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of	$0 00148	$0 00148
[fol. 927] Working Capital—Transmission System Trans. Lines and Comp. Stations (Handling Wet Gas)	$113,969	$113,969
Amount of Return	11,397	11,397
Balance (Handling Dry Gas)	52,969	52,969
Amount of Return	5,297	5,297
Total Amount of Return	$16,694	$16,694
Less 3% for Gasoline Operation	342	342
Balance	$16,352	$16,352
Dividing this balance by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F. of	$0 00038	$0 00038

UEBELACKER EXHIBIT No. 8—Continued

	Total	Allocated to W. Va.
Amortization (Annual Amount to be Amortized):		
Leaseholds—Proven Acreage		$1,868,524
Dividing this amount by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0.04164
Leaseholds—Unproven Acreage		$299,432
Dividing this amount by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0.00667
Production System—Plant not Depletable		$186,441
Dividing this amount by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0 00415
Transmission System		$692,894
Dividing this amount by Total Sales less Field Sales of 43,491,876 M. C. F. results in unit per M. C. F. of		$0 01593
General Property (Less General in Distribution)		$14,597
Dividing this amount by Total Sales of 44,875,983 M. C. F. results in [fol.928] unit per M. C. F. of		$0 00033
Depletion:		
Total Amount of Annual Amount of Depletion		$1,582,266
Less 3% for Gasoline Operation		47,468
Balance		$1,534,798

Dividing this balance by Total Sales of 44,875,983 M. C. F. results in unit per M. C. F. of		$0.03420
Total Expense	$399,860	$281,208
Distribution:		
Divided by Sales through Distribution Plants of 8,428,996 M. C. F. results in unit per M. C. F. of		$0.03336
Depreciation (Annual Amount of Depreciation) Direct Property		$79,212
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of		$0.00940
General Property		$9,138
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of		$0.00108

Return on Investment at 10%:	Allocated to W. Va. New	Allocated to W. Va. Less deterioration
Direct Property	$2,835,719	$2,380,622
Amount of Return	283,572	238,062
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	0.03364	0.02824
[fol. 929] General Property	$184,641	$169,558
Amount of Return	18,464	16,956
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	$0.00219	$0.00201
Working Capital	85,000	85,000
Amount of Return	8,500	8,500
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	$0.00101	$0.00101

UEBELACKER EXHIBIT No. 8—Continued

Amortization (Annual Amount of Amortization):	Total	Allocated to W. Va.
Direct Property	$140,722	
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	0 01669	
General Property	1,895	
Divided by Sales of 8,428,996 M. C. F. results in unit per M. C. F. of	0 00022	

[fol. 930]

United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

Revenue, as Indicated; Expenses, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923; also Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

West Virginia Distribution

Revenue:	No. of consumers	Average consumption per consumer (c. f.)	Quantity of gas sold (M c. f.)	Rate per M c. f.	Revenue
Domestic	32,566	112,000	3,647,392	38.49¢ (av.)	$1,404,207
Industrial	68	.....	4,781,604	23 41¢ (")	1,119,552
Total Gas Earnings			8,428,996		$2,523,579

Miscellaneous Income		7,500
Total Gross Income		$2,531,079
Expense:		
Production	$403,735	
Transmission	109,614	
Distribution	281,208	
Total	$794,557	
Depreciation:		
Production	$36,406	
Transmission	107,924	
Distribution	79,212	
General Property (Distribution System)	9,138	
" " (Balance)	3,710	
Total	$236,390	

UEBELACKER EXHIBIT No. 8—Continued

Amortization:		
Proven Acreage	$350,963	
Unproven "	56,242	
Production System (Plant not Depletable)	35,019	
Transmission "	134,287	
Distribution "	140,722	
General Property (Distribution System)	1,895	
" " (Balance)	2,742	
Total	$721,870	
Depletion:		
Total Operation Expense	288,280	
Net Income		2,041,097
		$489,982

[fol. 931] United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

Revenue, as Indicated; Expenses, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923; also Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

West Virginia Distribution

Valuation:	New	Less observed deterioration
Production	$8,852,178	$8,691,462
Transmission	2,924,891	2,483,732
Distribution	2,835,719	2,380,622
General—Distribution System	184,641	169,558
" —Balance	113,248	99,524
Working Capital—Production	124,525	124,525
" " —Transmission	31,691	31,691
" " —Distribution	85,000	85,000
Total Valuation	$15,151,893	$14,066,112
Per Cent Return on Valuation	3.234%	3.483%

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[fols. 932 & 933] UEBELACKER EXHIBIT No. 8A

United Fuel Gas Company, Incorporated

West Virginia Distribution

Analyses of Expenses and Return on Investment per M C. F. and in Total

Allocated to Domestic and Industrial Business on Basis of Maximum Demand

Expenses and Sales, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia; and Also Adjusted by Deduction of 3% of Expenses and Property Handling Natural Gas With Gasoline Content

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration

[fol. 934] United Fuel Gas Company, Inc.

Notes on Analyses of Expenses and Return on Investment Maximum Demand Basis

Allocation on Demand Responsibility:

Expenses (except production expenses), depreciation, amortization (except leaseholds and natural gas rights) and depletion charges, return on investment and valuation of property, going to make up the city gate rate, have been allocated to the domestic business and industrial business in proportion to the maximum demand of each. The maximum demand responsibility of each has been measured by the quantity of gas taken in West Virginia by the domestic and industrial consumers in the four coldest three-day periods in the years 1922, 1923 and January 1924. This results in 68 per cent of the above being charged to domestic business and 32 per cent to industrial business after considering the effect of increased rates on domestic consumption. Production expenses and amorti-

zation of leaseholds and natural gas rights have been allocated on basis of gas sales.

Distribution charges have been allocated upon the basis of estimated cost of service to the domestic and industrial consumers respectively. This estimate results in 90 per cent of distribution charges being made to domestic business and 10 per cent to industrial business.

The amounts which have been allocated in accordance with the above are the same as shown in the details attached [fol. 935] to statements entitled: Analyses of Expenses and Return on Investment per M C. F. and in Total; Expenses and Sales, Year 1923, as adjusted to allow for effect of increased rates on domestic consumption in West Virginia; and also adjusted by deduction of 3 per cent of expenses and property handling natural gas with gasoline content.

[fol. 936] UEBELACKER EXHIBIT 8A—Continued

United Fuel Gas Company, Inc.

Analysis of Expenses and Return on Investment Based on Expenses and Sales, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923; also Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales, West Virginia Distribution

Return at 8 per Cent

	Domestic		Industrial	
Expense:	New	Cost per M less deterioration	New	Cost per M less deterioration
Production	$0.04790	$0.04790	$0.04790	$0.04790
Transmission	.02044	.02044	.00734	.00734
Total	.06834	.06834	.05524	.05524
Depreciation:				
Production	.00679	.00679	.00244	.00244
Transmission	.02012	.02012	.00722	.00722

General (Less General in Distribution)	.00069	.00069	.00025	.00025
Total	.02760	.02760	.00991	.00991
Return:				
Production	.13203	.12963	.04739	.04653
Transmission	.04362	.03704	.01566	.01330
General (Less General in Distribution)	.00169	.00148	.00061	.00053
Working Capital—Production	.00186	.00186	.00067	.00067
" " —Transmission	.00047	.00047	.00017	.00017
Total	.17967	.17048	.06450	.06120
Amortization:				
Proven Acreage	.04164	.04164	.04164	.04164
Unproven "	.00667	.00667	.00667	.00667
Production System (Plant not Depletable)	.00653	.00653	.00234	.00234
Transmission System	.02504	.02504	.00899	.00899
General Property	.00051	.00051	.00018	.00018
Total	.08039	.08039	.05982	.05982
Depletion	.05375	.05375	.01929	.01929
Total City Gate Rate	$0.40975	$0.40056	$0.20876	$0.20546

UEBELACKER EXHIBIT 8A—Continued

	Domestic		Industrial	
Distribution:	New	Cost per M less deterioration	New	Cost per M less deterioration
Expense	.06939	.06939	.00588	.00588
Depreciation—Distribution Property	.01955	.01955	.00166	.00166
" —General "	.00225	.00225	.00019	.00019
Return —Distribution "	.05598	.04699	.00474	.00398
" —General "	.00364	.00335	.00031	.00028
" —Working Capital	.00168	.00168	.00014	.00014
Amortization—Distribution Property	.03472	.03472	.00294	.00294
" —General "	.00047	.00047	.00004	.00004
Total	$0.18768	$0.17840	$0.01590	$0.01511
Total Distribution Rate	$0.59743	$0.57896	$0.22466	$0.22057

[fol. 937] Return at 10 per Cent

Expense:				
Production	$0.04790	$0.04790	$0.04790	$0.04790
Transmission	.02044	.02044	.00734	.00734
Total	.06834	.06834	.05524	.05524

Depreciation:				
Production	.00679	.00679	.00244	.00244
Transmission	.02012	.02012	.00722	.00722
General (Less General in Distribution)	.00069	.00069	.00025	.00025
Total	.02760	.02760	.00991	.00991
Return:				
Production	.16504	.16204	.05924	.05817
Transmission	.05453	.04631	.01957	.01662
General (Less General in Distribution)	.00211	.00186	.00076	.00067
Working Capital—Production	.00232	.00232	.00083	.00083
" " —Transmission	.00059	.00059	.00021	.00021
Total	.22459	.21312	.08061	.07650
Amortization:				
Proven Acreage	.04164	.04164	.04164	.04164
Unproven "	.00667	.00667	.00667	.00667
Production System (Plant not Depletable)	.00653	.00653	.00234	.00234
Transmission System	.02504	.02504	.00899	.00899
General Property	.00051	.00051	.00018	.00018
Total	.08039	.08039	.05982	.05982
Depletion	.05375	.05375	.01929	.01929
Total City Gate Rate	$0.45467	$0.44320	$0.22487	$0.22076

UEBELACKER EXHIBIT 8A—Continued

	Domestic		Industrial	
Distribution:	New	Cost per M less deterioration	New	Cost per M less deterioration
Expense	06939	06939	00588	00588
Depreciation—Distribution Property	01955	01955	00166	00166
" —General "	00225	00225	00019	00019
Return —Distribution "	06997	05874	00593	00498
" —General "	00456	00418	00039	00035
" —Working Capital	00210	00210	00018	00018
Amortization—Distribution Property	03472	03472	00294	00294
" —General "	00047	00047	00004	00004
Total	$0 20301	$0 19140	$0 01721	$0 01622
Total Distribution Rate	$0 65768	$0 63460	$0 24208	$0 23698

[Ex. 60c]

United Fuel Gas Company, Inc.

Revenue, Expenses, and Return on Investment

Revenue as Indicated, Expenses Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia. Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923. Also Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales

West Virginia Distribution

	No. of consumers	Average consumption per consumer (cu. ft.)	Quantity of gas sold (M cu. ft.)	Rates	Domestic		Industrial	
						Revenue		Revenue
Revenue:								
Domestic	32,000	182,000	5,847,000	[illegible]		$3,[illegible]		
Industrial	68	[illegible]	4,781,000	[illegible]				$3,[illegible]
Miscellaneous Income	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
Total Income			9,628,000	[illegible]		$3,[illegible]		$3,[illegible]
Expenses:								
Production					$[illegible]		$[illegible]	
Transmission					[illegible]		[illegible]	
Distribution					[illegible]		[illegible]	
Total					$[illegible]		$[illegible]	

[illegible]

Uebelacker Exhibit 8A—Continued

Depreciation:				
Production	$24,756		$11,650	
Transmission	73,309		34,536	
Distribution	71,291		7,921	
General—Distribution System	8,224		914	
" —Balance	2,523		1,197	
Total	$180,102		$56,208	
Amortization:				
Proven Acreage	$151,869		$109,494	
Unproven Acreage	24,337		33,905	
Production System (Plant not Depletable)	23,913		11,246	
Transmission "	93,315		42,972	
Distribution "	126,659		14,972	
General Property—Distribution System	1,706		189	
" " —Balance	1,965		877	
Total	$423,555		$309,315	
Depletion	196,039		92,259	
Total Operating Expense		1,200,696		741,001
Net Income		$111,431		$378,551

[fol. 939] United Fuel Gas Company, Inc.

Revenue, Expenses and Return on Investment

Revenue, as Indicated; Expenses, Year 1923, as Adjusted to Allow for Effect of Increased Rates on Domestic Consumption in West Virginia

Valuation Basis: Estimated Cost of Reproduction New and Less Observed Deterioration as of December 31, 1923; also Adjusted by Deduction of 3 per Cent of Expenses and Property Handling Natural Gas with Gasoline Content

Allocation Based upon Maximum Demand Responsibility of Domestic and Industrial Sales

West Virginia Distribution

	Domestic		Industrial	
Valuation:	New	Less observed deterioration	New	Less observed deterioration
Production	$6,019,481	$5,910,193	$2,832,697	$2,781,267
Transmission	1,988,926	1,688,938	935,965	794,794
Distribution	2,552,147	2,142,560	283,572	238,062
General—Distribution System	166,177	152,602	18,464	16,956
" —Balance	77,009	67,676	36,239	31,848
Working Capital—Production	84,677	84,677	39,848	39,848
" " —Transmission	21,550	21,550	10,141	10,141
" " —Distribution	76,500	76,500	8,500	8,500
Total	$10,986,467	$10,144,696	$4,165,426	$3,921,416
Per Cent Return on Valuation	1 014%	1 098%	9 088%	9 653%

UEBELACKER EXHIBIT 8A—Continued

[fol. 940]

UEBELACKER EXHIBIT No. 11

Virginian Gasoline & Oil Company and Cabin Creek Gas Company

Gasoline Earnings for Year Ending December 31, 1923

Average Gross Price Received per Gallon		.1679
Gasoline Earnings		$3,013,860.53
Less: Gasoline Expense	$735,848.91	
General Expense & Taxes	87,901.58	
		823,750.49
Net Gasoline Earnings before Federal Taxes, Depletion and Depreciation		2,190,110.04
Federal Taxes	177,677.11	
Depreciation	145,884.50	
		323,561.61
Net Gasoline Earnings before deducting Royalties paid United Fuel Gas Co.		1,866 [illegible]
1/2 Net Gasoline Earnings before deducting Royalties paid United Fuel Gas Co. = $933,274.21 divided by total sales of 47,040,235 M Cu. Ft. =		$0.[illegible] Per M Cu. Ft.
Royalties paid by Gasoline Company = $367,941.70 divided by total sales of 47,040,235 M Cu. Ft. =		.00782 Per M Cu. Ft.

Gasoline Earnings for Year Ending April 30, 1924

Average Gross Price Received per Gallon		.1558
Gasoline Earnings		$2,853,299.89
Less: Gasoline Expense	$884,801.59	
General Expense	70,707.33	
General Taxes	14,659.67	
		970,168.59
Net Gasoline Earnings before Federal Taxes, Depletion and Depreciation		1,883,131.30
Federal Taxes	148,809.86	
Depreciation	141,331.29	
		290,141.15
Net Gasoline Earnings before deducting Royalty paid United Fuel Gas Co.		1,592,990.15
1/2 Net Gasoline Earnings before deducting Royalty paid United Fuel Gas Co. = $796,495.07 divided by total sales of 46,768,180 M Cu. Ft. =		$0.01700 Per M Cu. Ft.
Royalties paid by Gasoline Company = $335,336.22 divided by total sales of 46,768,180 M Cu. Ft. =		.00717 Per M Cu. Ft.

[fols. 942 & 943] Virginian Gasoline & Oil Company

Gasoline Earnings for a 12-Month Period During which the Quantity of Gasoline Sold in Year Ended April 30, 1924, was Sold at 14¢ Flat (Est.)

Gasoline Earnings		$2,564,431.66
Less: Gasoline Expense	$884,801.59	
General Expense	70,707.33	
General Taxes	14,659.67	
		970,168.59
Net Gasoline Earnings before Federal Taxes, Depletion and Depreciation		1,594,263.07
Federal Taxes	145,598.49	
Depreciation	141,331.29	
		286,929.78
Net Gasoline Earnings before deducting Royalty to United Fuel Gas Co.		1,307,333.29
1/2 Net Gasoline Earnings before deducting Royalty paid United Fuel Gas Co. = $653,666.65 divided by Total Sales of 47,040,235 M Cu. Ft. =		$0.01390 Per M Cu. Ft.
Royalties paid by Gasoline Company = $322,563.96 divided by total sales of 47,040,235 M Cu. Ft. =		.00686 Per M Cu. Ft.

Vol. II

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, [redacted]

No. [redacted] 4

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

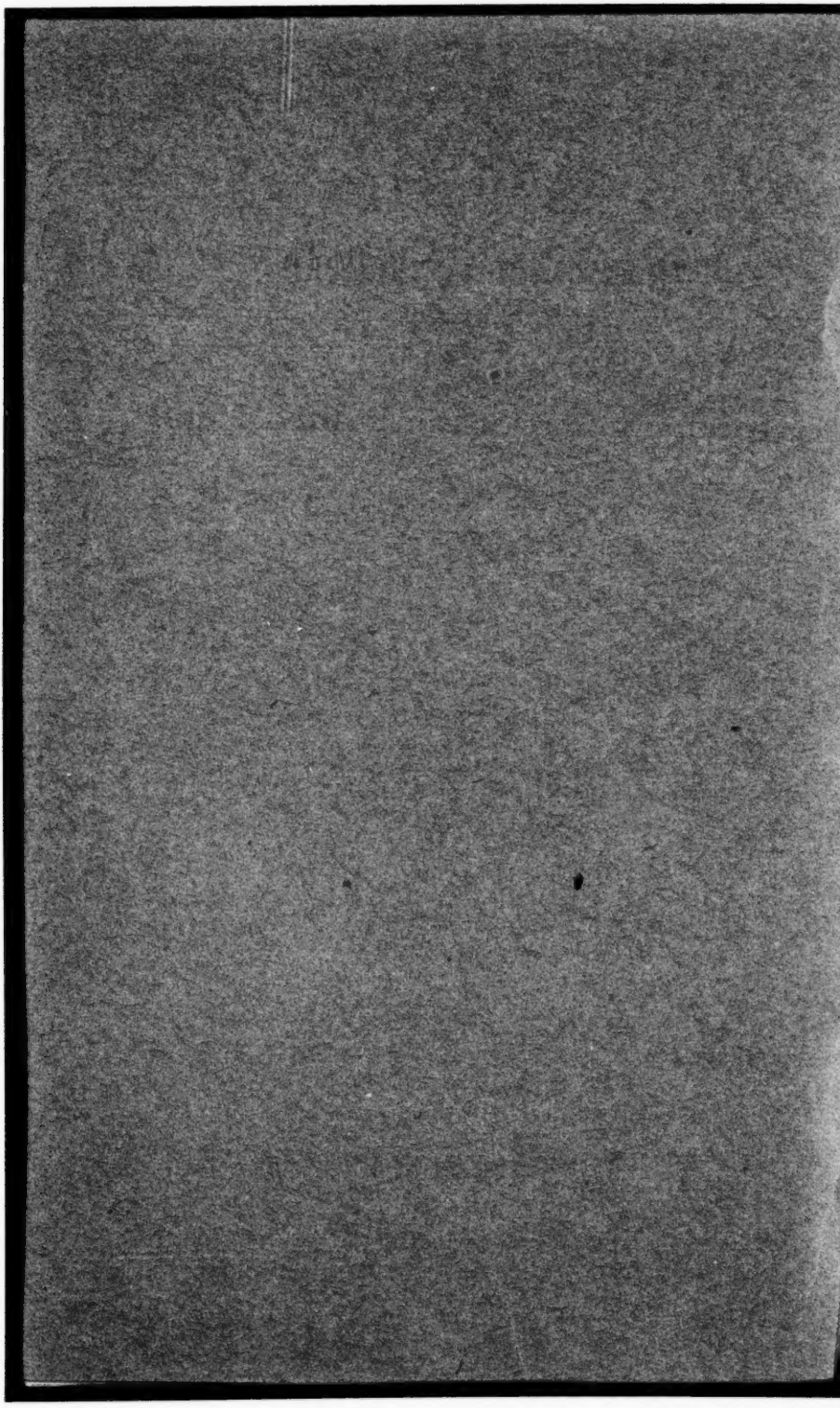
THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, [redacted], ET AL.

Imbodo Coffman and C. E. Hettinger.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA.

FILED JUNE [redacted] 1917

[redacted]



(32,006)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1926

No. 439

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA

VOLUME II

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Davis exhibits	944	705
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No. 2—Maps of gas holdings	1190	952

JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., JULY 23, 1926

J60003

UNITED FUEL GAS COMPANY

REPORT SHOWING

General Geologic Description of Natural Gas Properties
Classification of Acreage

and

Estimated Gas Reserve as of December 31, 1923

PART 1

RALPH E. DAVIS, Engineer,
Pittsburgh, Pennsylvania.
May 15, 1924

DAVIS EXHIBIT No. 1

UNITED FUEL GAS COMPANY

REPORT SHOWING

General Geologic Description of Natural Gas Properties
Classification of Acreage

and

Estimated Gas Reserve as of December 31, 1923

PART 1

RALPH E. DAVIS, Engineer,
Pittsburgh, Pennsylvania.
May 15, 1924

DAVIS EXHIBIT No. 1

RALPH E. DAVIS
Engineer
902 Peoples Gas Building
Pittsburgh

May 15, 1924.

UNITED FUEL GAS COMPANY,
Charleston, West Virginia.

Gentlemen:—

I submit to you herewith report covering the natural gas properties of the United Fuel Gas Company, the Warfield Natural Gas Company and the Cabin Creek Gas Company.

Yours very truly,

Ralph E. Davis.

RED/CEA

UNITED FUEL GAS COMPANY

REPORT SHOWING

General Geologic Description of Natural Gas Properties
Classification of Acreage
and
Estimated Gas Reserve as of December 31, 1923

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Part II.

GEOLOGICAL MAP IN FIVE SHEETS

Scale: One inch equals one mile
Outline Map-One Sheet
Scale: One inch equals two miles

710

SECTION I.

EXPLANATION OF METHODS, RESULTS AND RECOMMENDATIONS

UNITED FUEL GAS COMPANY

REPORT SHOWING

General Geologic Description of Natural Gas Properties

Classification of Acreage

and

Estimated Gas Reserve as of December 31, 1923

SCOPE OF REPORT

This report covers an investigation of the fee and leasehold property owned and controlled by the United Fuel Gas Company as of December 31, 1923. The gas producing properties directly owned by the Cabin Creek Gas Company and by the Warfield Natural Gas Company are included. Because of the close association of these companies, the work has been carried out as a single undertaking and reference made throughout the report to the "company" refers to whichever one of the three companies holds the property under discussion. Properties owned by other interests are referred to as "foreign" properties.

The purpose of the work has been (1) to assemble all available data pertinent to a study of the gas reserve of the property held by each company; (2) to determine said reserve so far as it is possible to do so in the present partially developed and partially tested condition of a large part of the territory; (3) to classify the undeveloped acreage now held as to its gas possibilities; and (4) to outline areas which have been proven unfavorable for production in well-known sands. In the determination of the gas reserves of the various parts of the territory distinction is made between reserves which are considered proven and reserves which are considered probable. The proven reserves are those contained in areas which have been thoroughly tested and which are now producing gas. The probable reserves are those believed to be available in territory partially tested by wells or in territory which appears to be especially favorable for gas because

of the geological conditions and the relation to known productive areas.

The report is presented in two parts.

PART I gives a detailed explanation of methods used, a summary of results obtained, recommendations, and contains all data which has been gathered and used in the preparation of the report, graphs and estimates of reserves of each part of the territory.

PART II consists of:

[1] A geologic map (in five sheets) prepared on a scale of one inch equals one mile. This map shows the principal geologic features of the territory, surface and subsurface structure, the location of productive wells and dry holes (including those owned by foreign interests) and shows a classification of the territory into proven, probable, possible and unfavorable areas.

[2] An outline map on one sheet [scale ½″ = 1 mile] showing (a) county boundaries and principle towns, (b) proven and probable territory, (c) company acreage classed as proven or probable, and (d) main gas transportation lines and compressor stations.

PROPERTY COVERED

The following table shows the property owned or controlled as of December 31, 1923 by each of the three companies. The leasehold property is controlled by virtue of the terms of the usual lease contract. The records of the land department of each company have been accepted as evidence of such ownership or control since it has been considered unnecessary for the purpose of this report to verify each deed or leasehold agreement.

The following table shows also the total number of gas and oil wells owned on December 31, 1923.

ACREAGE HELD ON DECEMBER 31, 1923

Title	Operated	Unoperated	Totals
United Fuel Gas Company			
Leasehold:			
Oil and Gas	12,713.46	73,283.20	
Gas	47,238.30	522,264.90	
TOTAL LEASEHOLD	59,951.76	595,548.10	655,499.86
Fee:			
Oil and Gas	60.84	681.21	
Gas	2,863.67	15,867.02	
Oil		432.00	
Minerals other than oil	71.50	13,259.32	
Absolute other than oil	232.45	7,676.53	
Absolute		49.07	
Coal		13.50	
Surface only		82.61	
Miscellaneous		2.25	
TOTAL FEE	3,228.46	38,063.51	41,291.97
TOTAL ACREAGE	63,180.22	633,611.61	696,791.83
Warfield Natural Gas Company			
Leasehold:			
Oil and Gas		29,812.50	
Gas	4,315.50	75,308.35	
TOTAL LEASEHOLD	4,315.50	105,120.85	109,436.35
Fee:			
Gas		636.00	
Absolute		41.50	
TOTAL FEE		677.50	677.50
TOTAL ACREAGE	4,315.50	105,798.35	110,113.85
Cabin Creek Gas Company			
Leasehold:			
Oil and Gas	1,405.00	6,600.00	
TOTAL LEASEHOLD	1,405.00	6,600.00	8,005.00
Fee:			
None			
TOTAL ACREAGE	1,405.00	6,600.00	8,005.00

(Continued)

ACREAGE HELD ON DECEMBER 31, 1923 (Continued)

SUMMARY

Title	Operated	Unoperated	Totals
United Fuel Gas Company	63,180.22	633,611.61	696,791.83
Warfield Natural Gas Company	4,315.50	105,798.35	110,113.85
Cabin Creek Gas Company	1,405.00	6,600.00	8,005.00
TOTAL ACREAGE	68,900.72	746,009.96	814,910.68

WELLS OWNED AND OPERATED DECEMBER 31, 1923

	Gas	Oil	Total
United Fuel Gas Company	741.7	..	741.7
Warfield Natural Gas Company	46.	..	46.
Cabin Creek Gas Company	9.	33	42.
TOTAL	796.7	33	829.7

DATA AVAILABLE AND USED IN STUDY

The following data has been available and has been carefully classified where necessary and used:

(1) Property maps (scale 4″ = 1 mile) on which are shown the major portion of the territory controlled by each company, also locations of all wells and tests made within the area studied. The lease boundaries of various tracts held are indicated on these maps except that in certain parts of the territory the maps are not complete in this detail. In general this has had no unfavorable effect on the work as the detailed location of each lease is of minor importance.

(2) Topographic maps published by the United States Geological Survey covering the entire area under consideration.

(3) Structure maps published by the West Virginia Geological Survey (for portions of West Virginia only) showing the structure of the surface formations. These structure maps have been worked out by the Survey, using various coals, the Kanawha Black Flint or the Big Lime as key horizons, and have been found sufficiently correct in the greater part of the area to make unnecessary more detailed field studies of surface structure.

(4) Published reports of the West Virginia Geological Survey.

(5) Well records of all company wells giving the location of the well, the date of its completion, the approximate elevation of the mouth of the well, depth to the top and bottom of formations penetrated, producing horizon, tubing and casing record, initial rock pressure, initial open flow, etc.

(6) Well records of many foreign wells located on properties adjoining or in the general vicinity of company leaseholds. These well records are usually but partially complete. The data given generally includes date of completion, depth of the well, producing horizon, reported initial open flow, and the depth to the producing horizon.

(7) The productive capacity of all company wells as reflected in the pressure data records of the company which have been carefully recorded since 1912.

(8) Production of each well in each year which was determined for the purpose of a previous report.

(9) Rock pressure data for practically all company wells. Rock pressures have been taken in each year for practically all wells completed since 1909.

PROCEDURE

Before undertaking any of the detailed work connected with the determination of the reserve of any part of the field, a comprehensive study has been made of the entire region in which the properties are held to determine such relations as may be found to exist either in particular places or in the entire territory between the geologic structure and the accumulations of gas or oil in productive pools.

Portions of the field which have been largely developed by gas wells have been studied with particular care to determine a method of measuring their gas reserve from the data available. It has been found that these developed portions of the gas fields have in the past given up their gas with a consistent drop in rock pressure and this has made it possible to measure the gas reserve of these areas by a special application of the rock pressure-production method. Briefly stated, use is made of Boyle's Law that the quantity of a gas present in a given volume varies directly as the absolute pressure.

Portions of the territory that have not been proven to contain commercial oil or gas pools have been studied to determine whether the conditions are favorable to the accumulation of oil or gas. In this study the location of such areas with reference to producing areas or to belts of proven dry territory has been considered the major evidence of value. The trend of the pools and the relation of same to structure has been given due weight. This has permitted all territory held and mapped to be classified as follows:

(1) Proven gas territory
(2) Proven oil territory
(3) Probable gas territory

(4) Probable oil territory
(5) Possible gas or oil territory
(6) Unfavorable territory

The classification as shown above for the territory held by each company is shown on page 34.

GEOLOGY

The general geologic studies carried out have been the following:

A map (in five parts) covering the territory on a scale of one inch equals one mile has been prepared on which there has been recorded the location of all producing wells and dry holes. Convenient symbols have been used to distinguish gas wells from oil wells, and to indicate the producing sand or sands of each well. The natural grouping of wells into fields (or pools) has been indicated on these maps by enclosing the wells of a group by a border, red having been used for the gas pools and green for the oil pools.

In those portions of the field where wells are sufficiently numerous to permit the preparation of a subsurface structure contour map, the structures have been indicated by structure lines drawn on the geologic maps. Considerable difficulty was met in the preparation of these maps and this difficulty was to a large extent overcome by preparing geologic cross-sections normal to the major folding of the region. For this purpose twenty-three geologic cross-sections normal to the axis of the Warfield Anticline and four miles apart were prepared, and one cross-section parallel to the Warfield Anticline was prepared. These sections were made with a horizontal scale of one inch equals one mile to a vertical scale of one inch equals two hundred and fifty feet for use during the progress of the work.

The detail of subsurface structure was worked out by plotting sand elevations of individual wells.

For those portions of the territory in which wells are so widely scattered that subsurface structures could not be mapped, the surface structures as mapped by the West Virginia Geological

Survey were transferred to the geologic map being prepared. The surface structures thus transferred are shown on the maps with black contours, whereas the subsurface structures are indicated by red contours for the Injun Sand, green contours for the Berea Sand, purple contours for the Weir Sand, blue for the Big Lime and yellow for the Salt Sand. It is pointed out that subsurface maps would have been preferable for all parts of the field and that surface structure maps have been used only where made necessary by lack of sufficient data. As new test wells are drilled in outlying portions of the field, an attempt should be made from time to time to determine the convergence of beds under such portions of the field, as this may have a bearing on the drilling program that should thereafter be followed.

The axes of the major anticlines and synclines have been indicated on the maps, except where subsurface structure is detailed.

The principal facts noted and conclusions drawn regarding the geologic occurrence of the gas and oil pools in the territory studied are the following:

(1) The formations from which production is obtained at present belong to the Lower Carboniferous and the Upper Devonian Systems.

(2) The more important gas producing horizons in order of importance are the following: Injun Sand, Berea Sand, Weir Sand, Big Lime, and Maxon Sand. The Keener, Salt and Squaw Sands are of minor importance.

(3) The oil production has been found principally in the Berea, Weir and Injun Sands. The Squaw Sand and the Keener Sand produce considerable oil in some parts of the territory, and the Salt Sand has afforded a few shortlived oil wells.

(4) The general position of the gas and oil accumulations is on the northwesterly flank of the granticline which runs from the Ohio Basin to the Appalachian folds.

(5) The general trend of the gas and oil pools is parallel to that of the major folding and there appears to be some localization of gas pools where minor folds cross the major structure.

[illegible] [illegible] [illegible] [

(20) The possibility of finding gas at a horizon deeper than any test that has yet been made will remain a question until such time as the demand for gas and the resulting price justifies the drilling of one or more deep tests. One well in the Triple State Field drilled to a depth of 2,670 feet is producing from that depth (possibly from the Cornifermum). Gas from this horizon contains sulphur and can only be used when mixed with large quantities of clean gas. Eventually much deeper tests should be made, and having in mind the contours of the upper formations to the southeast, it is suggested that such deep test when made be a mile or two southeast of the Westfield Anticline.

Detailed geologic section representation of three portions of the territory have been prepared from well logs and are shown in Section IV, Part I, of the report. The sections shown are the Chesbrough Pool, the Cabin Creek Pool and the Broomfield Pool. The Chesbrough and Broomfield Pools are located north of the Westfield Anticline; the Cabin Creek Pool lies to the south of it.

The surface elevations shown for the three wells used are the surface elevations of those wells. In each area the surface elevation varies from well to well considerably. The relative position of the several producing sands and their depth below sea level is shown.

It will be noted that there is a marked variation in the thickness of the several sands and of the intermediate beds, the latter showing a distinct thickening. This increase in thickness of intermediate beds is generally toward the southeast.

The Big Injun Sand shows less variation in thickness than is indicated by the Square, Weir and Berea. The Berea is thin or missing in the Chesbrough Pool while in the Cabin Creek Pool it is about 30 feet thick. The Square and Weir Sands are thick in the area south of the Chesbrough Pool but missing in the Broomfield Section and thin in the Cabin Creek Section.

GEOLOGIC OIL MAP

The purpose of the geological map is to form a concise but comprehensive base on which gas and oil pools and geological features can be readily studied.

This map is made up in five sheets and covers the territory in which acreage held by the United Fuel Gas Company, the Cabin Creek Gas Company, the Westfield Natural Gas Company and also the Columbia Gas & Electric Company is located. The territory of the Columbia Gas & Electric Company is included on the maps because a study similar to that herein described is in preparation for the Columbia Gas & Electric Company. The scale used is one inch equals one mile and the primary divisions of the map correspond to the farm maps of the company. These latter are on a scale of four inches equals one mile so that the area relation between the two is sixteen to one. The farm maps are divided into squares eight inches to a side, called map squares, and these divisions are also shown on the geological map to facilitate cross reference.

All individual gas wells and dry holes whether those of the company or of foreign ownership have been plotted and numbered according to the system used on the company farm maps. The producing sands of each gas well are noted by special symbols. Oil wells are not shown individually but in order to show the limits of an oil pool, a green line is drawn outside of the edge wells of each pool. In order to show the intensity of drilling within oil pools, a cross is used, each line of which is drawn proportional in length to the number of wells. For every sixty oil wells within a square mile, an inch of line is used and the center of the cross is placed centrally over the group of wells for that square mile.

The complete legend for the data on the geological map will be found on Sheet No. 5 of the map.

SUBSURFACE STRUCTURE

Each portion of the producing area has been separately studied and the subsurface structure determined in each where sufficient data has been available. Where the information has been too scanty to permit subsurface mapping, the structure as revealed in the surface beds and mapped by the West Virginia Geological Survey has been transferred to the geological map. The surface structure contours are in black while the subsurface contours of the Injun Sand are red, Berea green, Weir purple, Big Lime blue, and Salt Sand yellow.

The source of information for the determination of the positions of sub-surface beds was the excellent collection of well logs of the company wells and foreign wells which the company has on file. For well logs not contained in the company file, reference has been made to the county reports of the West Virginia Geological Survey.

Surface structure is shown with reference to sea level datum, while the subsurface contours are prepared with reference to a datum plane 3,000 feet below sea level. This is because all of the producing sands in this section of the state lie above this depth and most of them below sea level. With contours increasing in magnitude therefore, a rise is indicated in the beds and not a depression, as would be the case were sea level chosen as datum.

Since the record of well logs is largely for foreign companies, which show the depths to the producing sands only, structure contours have been drawn for these producing sands.

METHODS USED IN PLOTTING STRUCTURE

The method first used to work up structure on subsurface beds was to run at equal intervals cross section lines through the field. These lines were drawn at right angles to the general trend of the main axis of folding in this section of the state as indicated by the direction of the axes of the synclines and anticlines marked on the geological maps of the West Virginia Geological Survey. These lines were made parallel and the spacing between them was made four miles. At intervals of one mile along these cross section lines, panels were marked off and numbered. Each panel extended two miles on either side of the section line and therefore included an area one mile wide along the line and four miles long at right angles to the line. Within each of these panels the well logs of wells were recorded on special form ruled up for the purpose. In all panels the depth of the subsurface bed at the mid-point of the panel was desired but since it is exceptional to have a well located just at this point, wells within a reasonable distance were used and their average data taken to represent the conditions at the mid-point and on

the cross section line. Where wells were frequent, only those wells closest to this mid-point were used for the average but where wells are far apart, those available were used.

It was necessary to use averages rather than rely on the data for single wells for several reasons, chief of which was the fact that a very large part of the information is from logs of foreign companies and in the great majority of cases no elevation of the mouth of the well is given. This is also true for company wells to a great extent and this omission of elevation makes it necessary to use some other means than that usually employed in plotting subsurface structure. Furthermore in many cases, drillers will vary in the exact division between the sand and its overlying horizon, some going into the sand farther than others on account of the gradual rather than abrupt change in condition of the formations passed through. Also there are conditions where an unevenness of surface may affect the depth and in cases of some foreign wells, their exact location is open to doubt. On account of these factors likely to cause error, averaging was resorted to.

DETERMINATION OF ELEVATIONS OF WELLS

The omission of the elevations of the mouths of wells is a serious one if any attempt is made to construct a structure map showing underground conditions, for without this elevation no plot can be made showing the relations of sands. If a structure map is to be made, these elevations must be obtained either by sending out field parties and making barometric observations or by estimating them. Since it would have taken a long time to get to all the wells of the field for the purpose of getting the elevation of the mouth of the wel and would have been very expensive, the method of spotting the locations of these wells on the topographic maps contained in the reports of the West Virginia Geological Survey was resorted to. It was found that our averages worked out very well in spite of the small scale of these maps and the close contour interval, each representing a difference of elevation above sea level of fifty feet.

Excellent results were secured for several reasons. The farm maps of the company are enlarged reproductions of these

county topographic maps so that the creeks are duplicated on a larger scale but relatively correct. Furthermore the map records of the company are excellent and the map locations of wells are carefully made. Another favorable factor is the fact that gas wells especially those of a wild-cat nature are usually located at creek intersections or at a place which is flat enough to permit of the erection of the rig without the extra work of hauling materials up a hillside. Such places are not only found with greater accuracy of location on the topographic maps but the contours at these parts are wider and the estimate can in many cases be made to the nearest ten feet in spite of the contour interval of fifty feet. On the other hand, oil wells were not used where better data was available for these must be spaced closer and therefore there is not the latitude in the selection of a place to drill so that oil wells may be placed anywhere along the sides of a hill with no definite marking to locate the position on the topographic sheet.

An opportunity to test the accuracy of this method of estimating elevations was given during the progress of the work when a party was sent into the field to determine elevations of wells which were of special importance. These elevations had been previously estimated and it was gratifying to note that in spite of the numerous chances for error the elevations as found by barometric readings checked reasonably close with the estimated elevations and no change had to be made in the structure contours originally drawn in.

PLOTTING SAND DEPTHS

Geological cross sections, normal to the direction of the principal folding and at intervals of four miles were prepared, using a horizontal scale of one inch equals one mile (corresponding to the geological map), and a vertical scale of one inch equal to 250 feet (to accentuate the folding.)

Instead of using the arithmetical mean of the depths to any sand, the log of the well was actually plotted in its relative position along the length of the section but projected on the line. The elevation of the mouth of the well was first plotted to get its relation to sea level and then from this point the tops and bottoms of important sands were measured. An average of

these points was then taken and a smooth curve run from panel to panel to connect them. Where no measurements within a panel occur, the line is assumed from the slope it has on either side where wells occur.

These section lines were transferred on the structure map, and for every difference of twenty-five feet in elevation along these lines as noted from the cross sections, a point was marked with its elevation. With enough such points it was possible to draw in contours on the producing sand.

SUBSURFACE STRUCTURE CONTOURS

The general position and trend of the subsurface folds having been found from the cross sections, and the contours having been roughed in as described above, more detailed work was carried out by plotting on the map the sand elevations of single wells and groups of wells and detailing the structure lines by use of this information. Practically all of the minor irregularities were determined in this way.

CLASSIFICATION OF TERRITORY

The territory controlled by the three companies is situated in the general gas belt extending from Roane County southwestward into eastern Kentucky. The classification of territory resulting from this study includes not only the acreage held by the three companies but that of other interests whose leases are contiguous or within the same general area as that of the three companies.

Four classifications have been made: (a) proven, (b) probable, (c) possible, (d) unfavorable.

Considered as a whole the classification of territory has been without regard to ownership, i. e., areas which appear unfavorable are so classed regardless of ownership by one of the three companies or by foreign interests; in like manner territory which is proven or probable or prospective has been classed without regard to ownership. It has been convenient however, in a few

instances to deviate from this rule, the special circumstances of each case being pointed out later.

(a) Territory which has been classed as proven includes all areas in which development has been prosecuted sufficiently to demonstrate the presence of gas or oil in commercial quantities under present operating conditions. Some good wells have been drilled in territory outside of the boundaries of that classed as proven but because of the isolated position of the wells, or the fact that an insufficient number of wells had been completed to justify the installation of pipe line, the territory in which such isolated wells are located is not classed as proven although its prospective value is of course recognized.

The territory controlled by the United Fuel Gas Company in Roane, Kanawha, Cabell and Mingo Counties is in the main blocked territory, i. e., comparatively few leases are held by foreign companies. However, in each of the several proven pools which in the main are controlled by the United Fuel Gas Company, some leaseholds are owned and operated by foreign interests. In classifying the territory of these proven fields controlled largely by one of the three companies, the leaseholds of foreign operators are similarly classified.

In a few localities, pools or portions of pools are almost entirely controlled by foreign interests, and these areas although highly productive are not classed as proven for the reason that their reserves are of no avail to the three companies whose reserves are being determined. It has been thought proper to show on the map as proven only those portions of the field which are either entirely controlled or largely controlled by one of the three companies, and for reason above stated to include the proven pools controlled by the Columbia Gas & Electric Company

(b) Territory which has been mapped as probable includes not only acreage controlled by the three companies but acreage controlled by foreign interests. No area has been considered highly probable unless its relation to a proven pool is such that the probability of the pool extending over the territory classed as probable is more or less obvious. Not infrequently test wells have been drilled some distance from proven pools and where these have obtained a good flow of gas from the same sand, it is

reasonable to assume that the proven pool will be found to extend to the location of these outlying test wells. Another factor that has been of value especially in some instances in classifying territory as probable has been the general trend of a neighboring pool and the structure as indicated by the subsurface structure contours. For example, the small gas pool developed near the western border of Wayne County (shown on geologic map sheet number four, map squares 20-37, 39; 22-37, 39) shows an accumulation of gas where the subsurface contours rise from a water-filled portion of the sand. These structure contours indicate a extension northeastward of the minor anticline on which the gas appears to have been accumulated and this leads to the classification of the territory northeastward as highly probable.

(c) Territory which has been classed as possible includes those portions of the field in which tests are very widely scattered and which should therefore be further tested to determine the possibility of commercial gas or oil accumulations. A considerable portion of this territory has been tested to a minor extent by wells drilled only to the Big Lime from which there was commonly some flow of gas. It is believed that eventually small wells in the Big Lime will be commercial as the pools now yielding a maximum quantity of gas reach a declining stage. The territory classed as possible has therefore two possibilities; (1) that small wells in the Big Lime will become commercial, and (2) that deeper testing to the horizon of the Injun, Weir, and Berea may reveal gas accumulations now unknown and giving no surface indication of their presence.

(d) Territory classed as unfavorable has been to a large extent tested with unfavorable results. Gas and oil pools of considerable size and in general showing an alignment with the structure must be separated from each other by areas in the producing horizons that are barren; and where a number of test wells have been drilled with no favorable result, the conclusion must be drawn that these wells indicate or outline such a barren territory at least to the depth tested. In some areas these dry tests have found salt water making the conclusion still more positive. This is true of a considerable portion of the territory in northwestern Roane and Wayne Counties traversed by the Parkersburg Syncline where wells drilled to the Berea Sand have

with two exceptions found only salt water. These exceptions are likely to be small accumulations of oil in a territory largely barren and no hesitation has been felt in classing the broad territory within the Parkersburg Syncline as unfavorable.

To the southeastward of the belt containing the several proven pools, the formations become more highly folded and but few test wells have been drilled, these having given no favorable result. Realizing that either oil or gas may be found to the southeast, the probability of this is much less than within areas classed as possible and no hesitation has been felt in classing the territory to the southeast as unfavorable.

GAS RESERVES OF PROVEN GAS TERRITORY

The selection of a method by which the gas reserves of a territory may be determined with reasonable accuracy has been the subject of an intensive study by the writer and his staff during the past few years, during which time many gas properties have been appraised. There are a number of methods in more or less common use, each being useful under certain conditions. The time-honored method of estimating gas reserves by comparison with older fields, the production of which is known, has certain advantages particularly in a new field. The estimation of reserves by the use of composite production decline curves is of particular use where it is necessary to determine the gas reserves of individual wells and the rate of their probable recovery. This method also has the advantage of permitting an estimate that includes only reserves that are economically recoverable under the conditions of operation at the time of the estimate.

Boyle's Law has been very useful in the determination of gas reserves of certain areas. The method is one which may be applied with confidence to definitely defined pools in which the texture of the sand permits a ready flow of the gas and in which there is no water or oil encroachment. The method would be of no use in the fields in which the oil and salt water replaces rapidly the pore space occupied by the gas. The gas pools of southwestern West Virginia are in formations either water dry or formations in which the salt water shows very little encroach-

ment on the gas pools. It is therefore a region in which Boyle's Law may be used with a high degree of confidence.

In the application of Boyle's Law to the problem at hand, it had been found quite difficult in our earlier work to apply the law successfully. The reason for this has been determined and a modification of method introduced which to a large extent avoids the difficulties formerly met with.

The principal difficulty in the application of Boyle's Law has been that, whereas there should theoretically be a proportional drop in rock pressure for production from a pool, it was found that this ratio apparently failed to hold for a number of important pools. A pool in which there is more or less variation in texture and in which drilling has proceeded from one portion of the pool progressively toward its limits, with occasional abandonment of older wells, gives the average rock pressure reading for the wells producing in a later year considerably higher than would have been found, had the sand been of even texture, quite porous and the pressure of various wells approximately equal at various time intervals. The data for such a pool when plotted in a single rock pressure production graph results in a curve or irregular line which affords a great deal of difficulty in its extrapolation.

In a study made of the Spencer Pool, it was discovered that the pool could be naturally subdivided into areas, the wells of each area showing a consistent decline in rock presssure as gas was being withdrawn. The wells of a group located near the center of the Spencer Pool showed an initial rock pressure of approximately one thousand pounds per square inch and by 1922 had declined to a rock pressure of approximately 50 pounds per square inch. The several wells of this group showed in each intervening year between 1907 and 1922 a rock pressure very close to the average rock pressure of the wells of the group. During the same time period, drilling was carried on progressively toward the eastern and western ends of the pool, the newer wells showing rock pressures very much higher than the older wells and in some cases approximating that of the original condition of the gas body. It was evident that barriers or partial barriers to the flow of gas existed in the sand and that the answer found by averaging, say, five old wells, with one new well would

be very different from the answer obtained were five old wells averaged with, say three new wells. In the second instance, a higher average rock pressure for the field would be indicated and the conclusion would be reached that depletion was less complete.

In this study of the Spencer Pool, it was found that the pool could be sub-divided into fifteen producing areas, the wells of each area showing a consistent decline. Rock pressure-production graphs were prepared for each sub-area and it was found that these graphs followed comparatively straight lines and that their extrapolation offered much less difficulty than the single graph representing all of the wells and all of the production of the entire pool. The reserves of the Spencer Pool were therefore determined by finding a reserve for each of its fifteen parts. The rock pressure time graphs and the rock pressure-production graphs prepared for the Spencer Pool are shown in Section III of this report. It will be noted that the rock pressure-production graphs for areas located near the center of the pool show a comparatively flat slope whereas those located near the two ends of the pool are quite steep. There are apparently two reasons for this, (a) the sand body near the central part of the pool is probably more uniform in texture and somewhat more porous than that near its ends permitting the accumulation of a larger quantity of gas in a given volume of sand, and (b) the withdrawal of gas from the central area reduces the rock pressure materially while that toward the ends of the pool is still high, and the resistance to the flow of gas being such that some gas migrates to the area of low pressure, gas is being withdrawn from the outer ends of the pool continuously not only through the wells of the outer area but also to the sand body of the central area where it escapes through the wells located there.

A graphical study has been made to determine if possible the rate of flow of gas from an area of high pressure within a pool to a contiguous area of somewhat lower pressure. This study is shown herewith in Section III. The average rock pressure of the wells of each sub-area of the Spencer Pool have been indicated for each year, and lines have been drawn connecting the several points for any one year. It will be noted that the lines form a series of trough-shaped graphs, and that the initial wells drilled in areas outward from the center found an initial rock pressure

somewhat reduced from the virgin condition of the pool. The slope of these lines shows an average decline in pressure toward the center of the pool of about 115 pounds per mile, indicating that for a sand of the average porosity of that of the Spencer Pool, the increase in rock pressure from a drilled-up and producing area outward to virgin territory approximates this figure. This data has been of material use in the study of highly probable territory contiguous to proven fields and of undrilled portions of proven and but partially developed pools.

The gas reserves of each area which has been classed as proven have been measured by the modified rock pressure-production graph as described above. Each proven area has been subdivided to the end that neighboring wells which show a consistent decline in rock pressure have been grouped together and a single graph prepared for each group. Considered as a whole, the graphs are remarkably straight and it is believed that their extrapolation gives a reasonably close estimate of the gas reserve of the proven territory. The results are tabulated and are shown herewith on page 33.

It will be noted that in several of the proven pools, certain undrilled areas have been enclosed with purple lines. These areas denote places where further drilling is believed to be essential to an economic withdrawal of the gas, as it is evident that if no wells are drilled in said areas an extremely long time will be required to exhaust the gas through surrounding wells. The proven areas outside of the purple lines are believed to be in the main sufficiently drilled for an economic recovery of their gas reserve. This is indicated by the fact that the wells of these areas show similar rock pressures as gas is withdrawn. The rock pressure in the undrilled areas is doubtless higher than in surrounding producing areas, this being indicated by the relation of rock pressures of nearby wells to the rock pressures of wells centrally located in the producing areas. Account of this is taken in estimating the total remaining reserves of each pool.

Attention is called to the fact that the estimate of proven gas reserve as made herein is determined separately for many small areas and groups of wells, and that although it is but natural that some of these estimates will be high, others are likely to be

low and that the number of estimates made is sufficient to permit a considerable balancing of errors. It is the opinion of the writer and that of all of the men who were engaged in the work that the method used is the best one that can be applied and that the answer obtained is conservative.

For convenience in the study of unproven territory, the ultimate reserve* of each proven pool and of each subdivision has been determined. The production from 1913 to 1923 inclusive for the wells of each area is known, the reserve of each area as of December 31, 1923 has been determined, and the production prior to 1913 of each group of wells has also been estimated by extrapolating upward and to the left the production—rock pressure graph of each group until said graph intersects the initial rock pressure abscissa of the group. The ultimate reserve of a given group of wells or of a proven developed area is then found by adding the production prior to 1913 (if the area produced prior to 1913), the production from 1913 to 1923 inclusive, and the reserve as of December 31, 1923.

This total for all sub-areas of a pool gives the ultimate estimated production of the pool and this figure divided by the number of acres in the pool gives the estimated ultimate production per acre. These quantities have been determined for each pool and are shown in Table No. 1, pages 37–43 inclusive.

It is interesting to call attention to the fact that the total estimated production prior to 1913, found by the method just described for the wells of the United Fuel Gas Company, totalled 60.8 billion cubic feet. The total production of the United Fuel Gas Company prior to 1913 was 63.98 billion cubic feet. The fact that the estimated production prior to 1913 checks so closely with the actual production of the company does not lead to the belief that estimates of future production can be made with any such degree of accuracy but it does indicate that the methods used may be expected to give a reasonably close approximation.

*By "ultimate reserve" is meant the total recoverable gas, that which has been produced plus that which will be produced.

GAS RESERVES OF PROBABLE GAS TERRITORY

The estimation of gas reserves of territory which has been classed as probable is naturally a difficult and uncertain undertaking. Here we are dealing with territory which is believed, from a careful study of all pertinent facts, to be gas territory, yet had it been sufficiently drilled to prove the correctness of this conclusion, it would be proven territory. Estimates made therefore of the probable territory must be considered as much less trustworthy than those made of the proven territory.

The method used of estimating gas reserves in proven territory can not be applied to the probable territory as the necessary data is lacking. Recourse is therefore made to another method, that of comparison with the nearest proven pool in the same sand, modifying same by such data as may be available from outlying test wells, etc.

In estimating the reserve of a particular area, say one square mile, which has been classed as probable gas territory, the following factors are taken into account; (a) Sand from which production is expected. This is judged by the nearness of a given producing sand; for example if the probable territory lies close to an Injun pool, it will be classed as probably productive from the Injun Sand. (b) Present rock pressure. The rock pressure may be indicated by an outlying test well within the probable area and if so, this is used. If such data is not available the rock pressure of the nearest wells of proven territory are used. (c) Portion of square mile held by company. If the company controls the entire area, the company is credited with its entire reserve. If the company owns a portion only of the probable territory it is credited with a proportional amount of the reserve. (d) The productiveness of the sand. This is determined as described in detail in the preceding section. (e) A factor ranging from 25% to 100% has been applied as the individual cases have warranted. This factor is used to guard against certain possibilities, namely: (1) that a portion of the territory classed as productive will prove to be non-productive; (2) that gas will flow from the territory in question to neighboring wells particularly those of field competitors so that by the time wells may be

drilled by the company, the reserve will have been to some extent reduced.

The farm maps showing the location of undeveloped territory controlled by the three companies have been used in conjunction with the geological map on which probable territory is shown. All company leaseholds lying within the area classed as probable have been given a gas reserve by the method just outlined. These results are tabulated in Table No. 2, page 47

POSSIBLE GAS TERRITORY

The territory classed as possible requires further testing to determine whether it has no worth or very great worth. Until such tests are made it is impossible to make any estimate regarding gas reserves of such territory. The fact that no estimate is made does not mean that the conclusion is reached that no gas will be produced from such territory; it merely means that no estimate made at the present time would be of any value.

SUMMARY OF RESULTS

The total proven gas reserve as of December 31, 1923 is indicated as 249.1 billion cubic feet of gas and the total probable reserve as of the same date is indicated as 414.6 billion cubic feet of gas, making a total of 663.7 billion cubic feet proven and probable gas reserve. The division of this reserve by fields is shown in the following table.

Inasmuch as no reserve has been estimated for the acreage classed as possible and unfavorable, a portion of which is likely to prove productive, and inasmuch as proper conservatism has been exercised in the classification of proven and probable territory, the estimate presented herewith is believed to be fair.

Summary Showing Proven and Probable Gas Reserves

(Billion cubic feet)

Field	Proven Reserve	Probable Reserve
Clendenin	201.7	149.4
Spencer	18.2	12.3
Kanawha	*19.7	*145.0
Triple State	**9.5	**15.7
Outlying Fields in Lincoln, Wayne, Mingo, and adjoining Counties		92.2
Total	249.1	414.6
Total Proven and Probable		663.7

*Includes reserves of Cabin Creek Gas Company.

**Includes reserves of Warfield Natural Gas Company.

Classification of Acreage

The following table shows by fields the classification of territory as proven (this being divided into drilled and undrilled) probable, possible and unfavorable divisions.

UNITED FUEL GAS COMPANY

(Including Warfield Natural Gas Company)

SUMMARY SHOWING CLASSIFICATION OF ACREAGE AS OF DECEMBER 31, 1923

Field	Proven Acreage			Probable Acreage	Total Proven and Probable Acreage	Possible and Unfavorable Acreage	Total Acreage
	Drilled	Undrilled	Total				
Clendenin	77,408 0	20,448 0	97,856 0	38,912 0	136,768 0		
Spencer	18,560 0	960 0	19,520 0	8,640 0	28,160 0		
Kanawha	*3,008 0	128 0	3,136 0	29,888 0	33,024 0		
Triple State W. Va	3,257 6		3,257 6	236 8	3,494 4		
Triple State Ky	11,334 4		11,334 4	7,571 2	18,905 6		
Outlying Fields in Lincoln, Wayne, Mingo, and adjoining Counties				39,424 0	39,424 0		
TOTAL W. Va	102,233 6	21,536 0	123,769 6	117,100 8	240,870 4	455,921 43	696,791 83
TOTAL Ky	11,334 4		11,334 4	7,571 2	18,905 6	91,208 25	110,113 85
TOTAL W. VA & KY	113,568 0	21,536 0	135,104 0	124,672 0	259,776 0		

*Includes 320 acres producing both oil and gas

CABIN CREEK GAS COMPANY

Kanawha	1,216 0	64 0	1,280 0	1,536 0	2,816 0	5,189 00	8,005 00
GRAND TOTAL	114,784 0	21,600 0	136,384 0	126,208 0	262,592 0	552,318 68	814,910 68

RECOMMENDATIONS

The studies made of the gas territory held by the United Fuel Gas Company lead to the following conclusions regarding this territory and other territory situated in the same general fields.

(1) The company should continue its policy of acquiring acreage particularly acreage not now held which is located in the areas classed as proven or probable.

(2) Acreage now held in areas classed as possible or unfavorable should be given such test as is specifically recommended in the detailed discussion of each such area. Where this testing fails to discover reserves of value, the acreage should be abandoned.

(3) The drilling of additional wells in the proven areas should be confined so far as lease requirements permit to areas indicated on the outline map as undrilled proven acreage.

SECTION II

SUMMARY TABLES

Table No. 1—Gas Reserve of Proven Acreage

(Arranged by Pools and Areas)

Calculation of Production Factor for Each Sand and Area

Table No. 2—Gas Reserve of Probable Acreage

Table No. 3—Rock Pressure—Averages and Production

(Arranged by Proven Pools and Areas)

TABLE NO. 1

Gas Reserve of Proven Acreage

(Arranged by Pools and Areas)

Calculation of Production Factor for Each Sand and Area

SUMMARY SHOWING GAS RESERVES AND PRODUCTION OF PROVEN AREAS

Area	Average Initial Rock Pressure when Drilled	Date	Average I. O. F. Million Cu. Feet	Estimated Production Prior 1913 Billion Cu. Feet	Production 1913-1923 Billion Cu. Feet	Estimated Reserves to 0 lb. Rock Billion Cu. Feet	Estimated Total Production to 0 lb. Rock Billion Cu. Feet	No. Company Wells	*No. Foreign Wells	Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Square Miles in Area	Total Prod. per lb. per Sq. Mile Mil. cu. ft. based on Sq. Mile Att. to Co. Wells	Additional Reserves from Undrilled Parts	
															Estimated Rock Pressure based on Average Variation of 115 lb. per Mile	Reserves based on Est. Rock Pressure and Ave. Prod. Factor Billion Cu. Ft.
BEREA SAND																
A	970	1917	2 4		2 13	0 74	2 87	3	0	70	0	0	70	4 2		
B	900	1917	2 2		6 27	2 09	8 36	15	2	3 25	25	1 0	4 50	2 9	58	0 3
C	850	1916	4 5		15 95	2 05	18 00	34	10	3 75	1 25	0	5 00	5 6		
D	700	1916	3 6		5 49	1 11	6 60	9	0	2 00	0	0	2 00	4 7		
E	870	1910	3 8	4 50	17 04	2 26	23 80	25	1	2 75	25	5	3 50	9 9	46	0 1
F	900	1910	4 4	2 20	9 79	1 41	13 40	17	5	3 00	75	0	3 75	5 0		
G	900	1910	5 8	5 60	13 63	1 27	20 50	25	7	3 10	70	0	3 80	7 3		
H	910	1910	4 1	2 15	6 88	0 75	9 78	11	6	1 50	1 00	0	2 50	7 2		
I	975	1910	3 1	1 60	3 91	0 50	6 01	5	4	75	25	0	1 00	8 2		
J	950	1913	4 5		9 15	0 85	10 00	13	9	2 20	80	0	3 00	4 8		
K	575	1916	3 4		4 54	0 66	5 20	11	10	2 00	50	0	2 50	4 5		
L	635	1917	2 6		4 35	0 70	5 05	9	21	1 00	3 25	0	4 25	8 0		
Total or Ave	845		3 7	16 05	99 13	14 39	129 57	177	75	26 00	9 00	1 50	36 50	5 9 (a)		0 4
SALT SAND																
C-C	610	1915	2 7		5 63	0 77	6 40	12	6	2 00	1 50	0	3 50	5 2		
INJUN SAND																
M	615	1915	0 6		2 95	2 60	5 55	7	9	1 00	1 75	0	2 75	9 0		
Grand Ave. or Total				16 05	107 71	17 76 0 40	141 52 0 40									0 4
Total						18 16	141 92									

(a) Calculation of Production Factor for Berea Sand:

(1) Total production, all drilled areas, to 0 lb. rock pressure ..... 129.57 Billion Cu. Ft.
(2) Acreage attributable to production given in (1) ..... 26.0 Square Miles
(3) Average initial rock pressure of wells giving production under (1) ..... 845 Pounds

$$\text{Production Factor} = \frac{129.57 \text{ Billion Cu. Ft.}}{26.0 \text{ (Sq. Mi.)} \times 845 \text{ (lb.)}} = 5.9 \text{ million cu. ft. per square mile per pound drop in rock pressure}$$

*As of 12-31-1921.

CLENDENIN POOL

SUMMARY SHOWING
GAS RESERVES AND PRODUCTION OF PROVEN AREAS

Area	Average Initial Rock Pressure	Date Average Initial Rock Pressure	Production Estimated prior to 1913 Bil. Cu. Ft.	Production Calculated 1913-1923 inclusive Bil. Cu. Ft.	Est. Future Reserves to 0 lb. Rock Bil. Cu. Ft.	Estimated Total Production to 0 lb. Rock Bil. Cu. Ft.	Total Number Company Wells	†Number Foreign Wells	Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Square Miles in Area	Total Prod. per lb. per Sq.Mi. Mil. Cu. Ft. based on Sq.Mi. Att. to Co. Wells	Estimated Additional Reserves in Undrilled Parts
BIG INJUN SAND														
A	500	1913		20 4	9 1	29 5	53	25	7 25	3 00	0	10 25	8 1	.....
B	520	1905	6 6	21 4	15 1	43 1	59	10	13 70	1 75	3 30	18 75	6 0	1 3
C	500	1908	1 7	4 1	3 1	8 9	10	16	2 75	2 25	.50	5 50	6 5	.2
C-C	500	1916		1 3	2 7	4 0	2	1	.55	.20	0	.75	14 5	.....
D	510	1908	6 5	10 0	7 5	24 0	18	8	3 75	1 25	.50	5 50	12 5	.3
E	455	1910	1 9	4 4	2 6	8 9	17	6	3 55	1 25	1 20	6 00	5 5	.6
F	505	1906	3 9	9 4	7 7	21 0	24	0	4 25	0	.75	5 00	9 8	2 4
G	505	1904	2 6	4 0	3 4	10 0	7	0	2 00	0	.25	2 25	9 9	.8
H	490	1913		10 2	13 0	23 2	22	13	9 25	1 25	1 50	†12.00	5 1	.7
I	490	1910	1 5	9 3	8 4	19 2	10	10	2 85	2 00	.90	5 75	13 7	.4
J	520	1917		7 7	7 9	15 6	16	1	4 25	.25	1 25	5 75	7 1	.5
K	500	1908	1 2	7 5	7 8	16 5	15	0	5 40	0	2 60	8 00	6 1	1 7
L	520	1904	1 3	11 0	10 9	23 2	12	0	2 65	0	2 35	5 00	16 8	1 0
M-M	520	1917		1 2	4 6	5 8	4	0	.75	0	2 25	3 00	14 9	.7
N	535	1909	0 9	9 4	12 1	22 4	24	2	6 20	.50	1 30	8 00	6 8	.4
O	520	1909	2 5	14 8	9 6	26 9	40	1	6 75	.25	0	7 00	7 7	.....
P	520	1905	10 0	14 8	13 2	38 0	50	3	15 85	.50	5 65	22 00	4 6	2 3
Q	450	1911	0 9	2 6	2 2	5 7	7	0	1 50	0	.25	1 75	8 4	.1
R	500	1909	0 7	5 0	5 3	11 0	16	0	5 15	0	.60	5 75	4 3	.3
S	495	1909	0 6	5 9	4 6	11 1	20	1	4 00	.25	.50	4 75	5 6	.2
T	510	1910	0 9	8 1	12 3	21 3	37	6	12 00	2 00	6 00	20 00	3 5	3 4
W	480	1911	•2 0	8 2	12 6	22 8	15	0	2 00	0	0	2 00	23 7	.....
Ave. or Total ...	502	.....	45 7	190 7	175 7	412 1	478	103	116 40	16 70	31 65	164 75	7 1 (a)	17 3

†12-31-1921.

•H 1.20 Square Miles in proven dry not included.

•W Includes production of 12 Navajo Oil & Gas Co. wells purchased by U. F. G. Co., 12-9-21.

(a) Calculation of Production Factor for Injun Sand:

(1) Total production to 0 lb. Rock Pressure ..... 412.1 Billion Cu. Ft.
(2) Acreage attributable to the production given in (1) ..... 116.40 Sq. Miles
(3) Average initial rock pressure of the wells giving production under (1) ..... 502 Pounds

$$\text{Production Factor} = \frac{412.1 \text{ Billion Cu. Ft.}}{116.40 \text{ (Sq. Mi.)} \times 502 \text{ (lb.)}} = 7.1 \text{ million cu. ft. per square mile per pound drop in rock pressure}$$

CLENDENIN POOL

SUMMARY SHOWING

GAS RESERVES AND PRODUCTION OF PROVEN AREAS—(Continued)

Area	Average Initial Rock Pressure	Date Average Initial Rock Pressure	Production Estimated prior to 1913 Bil. Cu. Ft.	Production Calculated 1913-1923 inclusive Bil. Cu. Ft	Est. Future Reserves to 0 lb. Rock Bil. Cu. Ft.	Estimated Total Production to 0 lb. Rock Bil. Cu. Ft.	Total Number Company Wells	†Number Foreign Wells	Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Square Miles in Area	Total Prod. per lb. per Sq.Mi. Mil. Cu. Ft. based on Sq.Mi. Att. to Co. Wells	Estimated Additional Reserves in Undrilled Parts
BIG INJUN AND SQUAW SANDS														
A-A	500	1911	0 4	5 8	1 5	7 7	9	15	.75	.50	0	1 25	20 5	.....
M	480	1921	.....	1 7	4 7	6 4	8	4	1 35	.60	.30	2 25	9 9	.2
Y	260	1913	.....	2 2	0 7	2 9	7	3	.70	.30	0	1 00	15 9	.....
Ave. or Total	413	.....	0 4	9 7	6 9	17 0	24	22	2 80	1 40	.30	4 50	14 7	.2
WEIR SAND														
X	200	1913	.....	1 3	0 5	1 8	6	0	.75	0	0	.75	12 0	.....
Z	380	1913	.....	2 9	1 1	4 0	8	0	1 00	0	0	1 00	10 5	.....
Ave. or Total	290	.....	.....	4 2	1 6	5 8	14	0	1 75	0	0	1 75	11 4	.....
Grand Ave. or Total	.....	.....	46 1	204 6	184 2 17 5	434 9 17 5	516	.....	120 95	18 1	31 95	.....	.....	17 5
					201 7	452 4								

†12-31-1921.

KANAWHA POOL

SUMMARY SHOWING

GAS RESERVES AND PRODUCTION OF PROVEN AREAS

Area	Average Initial Rock Pressure	Date Average Initial Rock Pressure	Production Estimated previous 1913 Bil. Cu. Ft.	Production Calculated 1913-1923 inclusive Bil. Cu. Ft.	Est. Future Reserves to 0 lb. Rock Bil. Cu. Ft.	Estimated Total Production to 0 lb. Rock Bil. Cu. Ft.	Total Number Company Wells	†Number Foreign Wells	Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Square Miles in Area	Total Prod. per lb. per Sq.Mi. Mil. Cu. Ft. based on Sq.Mi. Att. to Co. Wells	Estimated Additional Reserves in Undrilled Parts
*A	405	1917		2 3	0 2	2 5	10	(Not figured, as area is small with many foreign wells; also all wells producing both oil and gas.						
*B	417	1917		3 8	1 1	4 9	4	1	0 7	0 2	0	0 9	16 8	
*C	488	1917		5 0	4 5	9 5	5	0	0 8	0	0 1	0 9	24 3	0 1
D	460	1917		3 5	0 8	4 3	14	(Not figured, as area is small with many foreign wells; also all wells producing both oil and gas.						
E	468	1917		12 1	4 2	16 3	11	0	1 9	0	0	1 9	18 3	
F	480	1917		10 9	8 6	19 5	12	0	2 3	0	0 2	2 5	17 7	0 2
Total *Cabin Creek G. Co.	437			11 1	5 8	16 9	19							0 1
Total United Fuel G. Co.	469			26 5	13 6	40 1	37							0 2
Total or Average Cabin Creek G. Co. & United Fuel G. Co	453			37 6	19 4	57 0	56							0 3
Total or Ave. Areas B, C, E, & F	463			31 8	18 4	50 2	32		5 7	0 2	0 3	6 2	19 0 (a)	0 3

*Wells in Areas A, B and C are Cabin Creek Gas Company wells. †12-31-1921.

Note: There were very few rock pressure tests taken in this field, particularly on the Cabin Creek Gas Company's wells.

(a) Calculation of Production Factor for areas B, C, E and F:

(1) Total production to 0 lb. rock pressure ..... 50.2 Billion Cu. Ft.
(2) Acreage attributable to the production given in (1) ..... 5.7 Square Miles
(3) Average initial rock pressure of B, C, E and F ..... 463 Pounds

$$\text{Production Factor} = \frac{5.02 \text{ Billion Cu. Ft.}}{5.7 \text{ (Sq. Mi.)} \times 463 \text{ (lb.)}} = 19.0 \text{ million cu. ft. per square mile per pound drop in rock pressure}$$

TRIPLE STATE FIELD

ESTIMATION OF GAS RESERVES BY AREAS OF PROVEN POOLS AND CALCULATION OF PRODUCTION FACTOR

Area	Average Initial Rock Pressure	Date Average Initial Rock Pressure	PRODUCTION IN BILLION CUBIC FEET				Total Company Wells	CALCULATION OF PRODUCTION FACTOR				
			Estimated Previous 1913	Calculated 1913-1923 inclusive	Estimated Reserves to 40 lb.	Estimated Total		Square Miles Attributable to Company Wells	Square Miles Attributable to Foreign Wells	Square Miles Attributable to Undrilled Acreage	Total Sq. Miles in Area	Production per lb. Loss per Sq. Mile Million cu. ft.
ALL SANDS (SALT, MAXON, BIG LIME AND INJUN)												
All Wells	(a) 318	1913	(b)	15 5	(c) 9 5	(d) 25 0	65	22 8	0 5	0	23 3	(e) 3 9

(a) Unable to obtain accurate initial rock pressure.
(b) Estimate of production prior to 1913 not made on account of insufficient data.
(c) Economic Limit taken at 40 lb. on account of water conditions and past abandonment of wells at higher pressures.
(d) Production taken between 318 lb. rock pressure and 40 lb. rock pressure.
(e) Production Factor.

(1) Production between 318 lb. rock pressure and 40 lb. rock pressure	25.0 Billion Cu. Ft.
(2) Drop in rock pressure.	278 Pounds
(3) Acreage attributable to this production	22.8 Square Miles

$$\text{Production Factor} = \frac{25.0 \text{ Billion Cu. Ft.}}{22.8 \text{ (Sq. Mi.)} \times 278 \text{ (lb.)}} = 3.9 \text{ million cu. ft. per square mile per pound drop in rock pressure}$$

TABLE NO. 2

Gas Reserve of Probable Acreage

SUMMARY SHOWING PROBABLE GAS RESERVES

Area	Class of Territory	LOCATION		Sand	Square Miles of Company Acreage	Production Factor Used	Rock Pressure Used	Factor	Est. Reserves to 0 lb. Rock Bil. Cu. Ft.
		Sheet No.	Farm Map						
CLENDENIN FIELD									
209	Probable	2	29	Injun	0 2				
210	Probable	2	28, 37, 38	Injun	1 4	7 1	505	25%	1 3
211	Probable	2	37, 38	Injun	5 7	7 1	507	75%	15 4
213	Probable	2	29, 39	Injun	17 3	7 1	510	65%	40 7
304	Probable	3	47	Injun	1 5	7 1	500	75%	4 0
307	Probable	2, 3	38, 48, 49	Injun and Weir	22 0	7 1	485	75%	56 8
316	Probable	3	47, 48	Injun	12 7	7 1	462	75%	31 2
Total					60 8				149 4
SPENCER FIELD									
204	Probable	2	9, 19	Berea	1 1	5 9	635	25%	1 0
205	Probable	2	18	Berea	1 2	5 9	811	25%	1 4
207	Probable	2	18, 19	Injun	1 7	9 0	615	25%	2 4
208	Probable	2	17, 18, 27, 28	Salt	9 5	5 2	610	25%	7 5
Total					13 5				12 3
KANAWHA FIELD									
322	Probable	3	47, 48, 57	Big Lime, Keener, Injun	8 1	7 1	340	75%	14 7
U. F. G. Co. 325	Probable	3	57, 58	Weir	22 2	19 0	400	50%	84 4
Cabin Creek 325	Probable	3	58	Weir	2 4	19 0	400	25%	4 6
330	Probable	3	57, 67	Big Lime	5 4	3 0	330	75%	4 0
332	Probable	3	58, 68	Berea, Weir	4 1	4 0	558	100%	9 2
335	Probable	3	58, 68	Berea	1 8	4 0	540	100%	3 9
339	Probable	3	58, 68	Weir	5 1	19 0	500	50%	24 2
Total					49 1				145 0
TRIPLE STATE FIELD									
501, 502, 510	Probable	5	82, 83	Salt, Maxon, Big Lime, Inj.	12 2	3 9	330	100%	15 7
OUTLYING FIELDS IN LINCOLN, WAYNE, MINGO AND ADJOINING COUNTIES									
402	Probable	4	44	Berea	1 0	4 0	546	100%	2 2
403	Probable	4	45	Berea	1 0	4 0	558	50%	1 1
405	Probable	4	45, 54, 55	Berea	1 1	4 0	570	100%	2 5
408	Probable	4	55, 56, 65, 66	Big Lime and Berea	51 6	4 0	509	75%	78 8
411	Probable	4	55	Big Lime and Berea	0 1	4 0	550	100%	0 2
413	Probable	4	66, 75	Big Lime	1 5	3 0	330	100%	1 5
415	Probable	4, 5	73, 83	Big Lime	3 3	3 9	330	100%	4 2
419	Probable	4	74, 75	Big Lime	2 0	3 9	223	100%	1 7
Total					61 6				92 2
Grand Total					197 2				414 6

TABLE NO. 3

Rock Pressure—Averages and Production

(Arranged by Proven Pools and Areas)

SPENCER POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1913			1914			1915			1916			1917			1918		
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.
BEREA SAND																		
A													1	970	58 58	1	940	104 162
B													5	859	256 256	5	792	703 959
C										2	854	179 179	14	799	1664 1843	16	631	3043 4886
D							1	(650)	12 12	4	706	374 386	9	507	1108 1494	9	429	958 2452
E	15	666	1371 1371	18	590	1434 2805	20	523	1361 4166	21	419	3087 7253	23	287	3621 10874	23	245	2527 13401
F	10	570	985 985	8	508	278 1263	14	422	1024 2287	15	278	1766 4053	15	218	1697 5750	16	147	1648 7398
G	18	454	3001 3001	17	380	1490 4491	24	267	2528 7019	24	186	2193 9212	24	129	1249 10461	24	89	1167 11628
H	7	589	1654 1654	8	340	1205 2859	9	281	969 3828	11	220	860 4688	11	158	563 5251	11	(91)	447 5698
I	5	568	820 820	5	438	806 1626	5	376	159 1785	5	268	418 2203	5	215	689 2892	5	143	345 3237
J	4	945	325 325	7	716	1010 1335	11	504	2676 4011	12	315	1929 5940	12	178	976 6916	12	123	849 7765
K										3	512	592 592	9	312	1537 2129	9	186	1018 3147
L													1	635	217 217	1	475	1138 1355
Total or Average	59	632	8156 8156	63	495	6223 14379	84	396	8729 23108	97	418	11398 34506	129	439	13635 48141	132	382	13947 62088
SALT SAND																		
C-C							2	608	494 494	5	570	560 1054	7		1007 2061	7	476	927 2988
INJUN SAND																		
M							2	613	5 5	5	597	187 192	5		611 803	5	483	461 1264

*Number of wells having production.
Rock Pressure expressed in pounds per square inch.
Production in million cubic feet.

SPENCER POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1919			1920			1921			1922			1923			March 1924 Rock Press.	Average Initial Daily Open Flow Million Cu. Ft.	Approx. Date of Initial Drilling
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.			
BEREA SAND																		
A	2	850	240 402	3	530	723 1125	3		500 1625	3	248	264 1889	3	210	245 2134	172	2 4	1917
B	6	635	1359 2318	7	377	1394 3712	13	340	1106 4818	14	230	772 5590	15	188	676 6266	136	2 2	1917
C	20	471	2932 7818	28	265	3841 11659	30	(183)	1940 13599	32	117	1316 14915	33	94	1035 15950	66	4 5	1916
D	9	337	730 3182	9	230	861 4043	9	(186)	549 4592	9	174	499 5091	9	128	397 5488	90	3 6	1916
E	21	209	1121 14522	21	166	820 15342	20	149	773 16115	18	112	472 16587	18	95	450 17037	77	3 8	1910
F	13	109	1188 8586	12	69	441 9027	10	(68)	364 9391	10	61	229 9620	9	51	167 9787	43	4 4	1910
G	22	79	726 12354	19	60	480 12834	19	(53)	349 13183	16	45	242 13425	12	40	202 13627	34	5 8	1910
H	6	95	408 6106	7	(60)	319 6425	6	(85)	189 6614	6	60	151 6765	5	48	118 6883	45	4 1	1910
I	4	117	256 3493	4	102	162 3655	3		109 3764	3	74	95 3859	3	70	47 3906	66	3 1	1910
J	11	101	567 8332	11	86	293 8625	11	(90)	268 8893	10	65	163 9056	9	51	96 9152	44	4 5	1913
K	10	(173)	566 3733	9	128	338 4071	9	(110)	164 4235	9	80	171 4406	9	64	131 4537	55	3 4	1916
L	2	363	983 2338	7	197	771 3109	9	169	668 3777	9	128	255 4032	9	84	315 4347	79	2 6	1917
Total or Average	126	306	11096 73184	137	201	10443 83627	142	219	6979 90606	139	116	4629 95235	134	94	3879 99114	76	3 7	
SALT SAND																		
C-C	9	371	1046 4034	9	243	695 4729	7		421 5150	6	151	304 5454	6	101	177 5631	89	2 7	1915
INJUN SAND																		
M	6		364 1628	7	413	372 2000	7		341 2341	7	333	322 2663	7	307	284 2947	281	0 6	1915

*Number of wells having production.
Rock Pressure expressed in pounds per square inch.
Production in million cubic feet.

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1913			1914			1915			1916			1917			1918		
	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.
									INJUN SAND									
			498			1989			1644			1533			1886			1504
A	14	447	498	24	400	2487	25	359	4131	25	310	5664	28	(247)	7550	29	232	9054
			1105			1045			1072			1328			3031			2511
B	24	438	1105	27	421	2150	36	411	3222	42	396	4550	43	355	7581	44	334	10092
			218			362			334			257			385			504
C	7	380	218	7	365	580	8	376	914	8	363	1171	10	327	1556	10	(325)	2960
												7			214			247
C-C										1	493	7	2	480	221	2	460	468
			739			599			342			263			1116			1210
D	15	335	739	15	330	1338	15	318	1680	15	308	1943	15	(273)	3059	15	271	4269
			357			398			449			495			412			537
E	7	367	357	8	(354)	755	11	364	1204	14	355	1699	13	324	2111	15	307	2648
			878			649			525			578			1140			800
F	13	390	878	14	(395)	1527	17	377	2052	17	366	2630	18	348	3770	18	320	4570
			491			293			490			186			639			398
G	7	405	491	7	393	784	6	(389)	1274	7	(392)	1460	7	(373)	2099	6	342	2497
			205			661			1005			849			718			789
H	3	473	205	9	448	866	11	402	1871	15	385	2720	15	369	3438	15	351	4227
			547			425			360			314			1191			1321
I	5	403	547	6		972	6	379	1332	6	350	1646	8		2837	8	290	4158
															437			740
J													9	520	437	12	480	1177
			222			479			478			637			1034			766
K	7	463	222	10	456	701	10	449	1179	11	432	1816	11	(394)	2850	11	373	3616
			304			833			1111			1323			1143			619
L	3	485	304	8	457	1137	9	431	2248	9	400	3571	9	(391)	4714	9	363	5333
															154			137
M-M													2	518	154	2	503	291
			73			142			271			382			1725			1147
N	5	526	73	7	519	215	12	502	486	14	496	868	17	(455)	2593	17	427	3740
			1640			683			556			1571			1878			1612
O	12	460	1640	12	420	2323	18	419	2879	21	404	4450	30	358	6328	30	314	7940
			1033			650			226			608			2864			2016
P	23	444	1033	24	436	1683	27	425	1909	31	414	2517	34	(374)	5381	35	364	7397
			500			335			250			326			129			213
Q	6	397	500	7	376	835	7	(348)	1085	6		1411	7		1540	7	326	1753
			170			17			33			80			786			731
R	4	454	170	4		187	6	472	220	8	460	300	9	440	1086	10	399	1817
			401			106			68			213			1026			831
S	2	459	401	5	441	507	7	438	575	10	430	788	15	361	1814	15	351	2645

CLENDENIN POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1913			1914			1915			1916			1917			1918		
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.
INJUN SAND (Cont'd)																		
			243			55			90			103			747			852
T	8	472	243	8	461	298	12	452	388	17	463	491	20	452	1238	20	438	2090
			1107			1108			1115			1000			923			802
W	3	430	1107	3		2215	3	369	3330	3	350	4330	3	(314)	5253	3	(285)	6055
Total or			10731			10829			10419			12053			23578			20287
Average	168	433	10731	205	417	21560	246	404	31979	280	398	44032	325	384	67610	333	357	87897
INJUN AND SQUAW SANDS																		
			706			469			485			403			638			600
A-A M	6		706	9	415	1175	9	341	1660	8	322	2063	9		2701	9	243	3301
			363			154			251			230			180			119
Y	5	260	363	5		517	5	198	768	6	145	998	6		1178	5		1297
Total or			1069			623			736			633			818			719
Average	11	260	1069	14	415	1692	14	270	2428	14	234	3061	15		3879	14	243	4598
WEIR SAND																		
			139			103			166			166			171			42
X	2		139	2	170	242	2	150	408	6	143	574	5		745	4		787
			165			508			237			245			342			242
Z	2	378	165	3		673	2	255	910	7	242	1155	7		1497	7	179	1739
Total or			304			611			403			411			513			284
Average	4	378	304	5	170	915	4	203	1318	13	193	1729	12		2242	11	179	2526

*Number of wells having production.

Rock Pressure expressed in pounds per square inch.

Production in million cu. ft.

CLENDENIN POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1919			1920			1921			1922			1923			March 1924 Rock Press.	Average Initial Daily Open Flow Million Cu. Ft.	Approx. Date of Initial Drilling
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.			
									INJUN SAND									
A	35	197	2378 11432	49	139	3261 14693	43	(95)	2083 16776	41	113	2026 18802	37	98	1567 20369	83	1 2	1913
B	43	309	2241 12333	48	282	2267 14600	48	270	1699 16299	49	248	2175 18474	54	218	2885 21359	180	3 2	1905
C	10	286	396 2456	10	264	315 2771	10	(195)	351 3122	10	252	414 3536	10	195	544 4080	168	2 8	1908
C-C	2	(415)	193 661	2	405	210 871	2		120 991	2	370	129 1120	2	340	204 1324	317	2 1	1916
D	15	241	1364 5633	15	210	786 6419	15		1083 7502	15	183	1415 8917	16	161	1100 10017	151	2 8	1908
E	16	283	397 3045	17	262	343 3388	17	238	335 3723	17	220	344 4067	17	198	362 4429	166	2 4	1910
F	18	302	878 5448	18	283	906 6354	19	(275)	492 6846	22	251	1318 8164	24	214	1201 9365	184	4 7	1906
G	7	(331)	265 2762	7	300	307 3069	7	(291)	282 3351	7	271	437 3788	7	239	235 4023	215	4 9	1904
H	15	340	831 5058	15	307	794 5852	16	(318)	1108 6960	17	271	1469 8429	21	(230)	1725 10154	229	1 9	1913
I	8	257	1242 5400	8	243	923 6323	8		961 7284	8	211	1112 8396	10	190	924 9320	171	1 5	1910
J	12	441	750 1927	14	389	1131 3058	16	361	1358 4416	16	314	1695 6111	16	281	1576 7687	255	3 5	1917
K	11	356	577 4193	11	331	714 4907	11	(316)	642 5549	11	282	949 6498	15	253	1024 7522	239	3 0	1908
L	9	349	640 5973	10	328	875 6848	10	300	929 7777	10	272	1306 9083	12	(245)	1905 10988	238	3 5	1904
M-M	2	488	184 475	2	485	146 621	2	475	114 735	3	450	167 902	3	433	326 1228	405	1 0	1917
N	19	409	1041 4781	19	382	1064 5845	19	(366)	862 6707	19	330	1310 8017	23	303	1337 9354	280	1 5	1909
O	30	305	1281 9221	32	281	1409 10630	24	252	1338 11968	36	221	1603 13571	39	192	1258 14829	179	5 5	1909
P	35	344	1490 8887	36	308	1505 10392	38	293	1114 11506	43	267	1730 13236	48	242	1550 14786	220	3 4	1905
Q	7		203 1956	7	287	170 2126	7	(262)	111 2237	7	255	217 2454	7	234	160 2614	218	2 1	1911
R	10	377	577 2394	10	342	545 2939	12	357	410 3349	13	302	780 4129	16	261	821 4950	238	2 0	1909
S	15	307	572 3217	15	291	635 3852	16	258	490 4342	18	235	821 5163	20	215	722 5885	194	3 8	1909

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1919			1920			1921			1922			1923			March 1924 Rock Press.	Average Initial Daily Open Flow Million Cu. Ft.	Approx. Date of Initial Drilling
	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.			
INJUN SAND (Cont'd)																		
			819			841			908			1849			1568			
T	21	397	2909	23	379	3750	31	(380)	4658	33	323	6507	36	290	8075	285	1 1	1910
			667			532			324			238			417			
W	3	272	6722	3	267	7254	14		7578	15	263	7816	15	(252)	8233	264	2 4	1911
Total or			18986			19679			17114			23504			23411			
Average	343	334	106883	371	308	126562	385	295	143676	412	268	167180	448	240	190591	222	2 7	
INJUN AND SQUAW SANDS																		
			767			585			296			495			335			
A-A	9	181	4068	9	164	4653	9		4949	8	103	5444	8	90	5779	85	2 9	1911
									126			765			794			
M							4	479	126	7	364	891	8	314	1685	305	1 9	1921
			140			152			141			192			283			
Y	5	95	1437	5	83	1589	5		1730	5	59	1922	4	58	2205	75	4 9	1913
Total or			907			737			563			1452			1412			
Average	14	138	5505	14	124	6242	18	479	6805	20	175	8257	20	154	9669	155	3 2	
WEIR SAND																		
			76			85			104			129			109			
X	3	89	863	3	76	948	3		1052	3	52	1181	3	(45)	1290	54	1 7	1913
			297			244			210			213			170			
Z	8	141	2036	8	122	2280	8		2490	8	97	2703	8	88	2873	75	1 5	1913
Total or			373			329			314			342			279			
Average	11	115	2899	11	99	3228	11		3542	11	75	3884	11	67	4163	65	1 6	

*Number of wells having production.

Rock Pressure expressed in pounds per square inch.

Production in million cubic feet.

KANAWHA POOL

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1913			1914			1915			1916			1917			1918		
	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	No.• of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.	•No. of Wells	Ave. Rock Press.	Years Prod.— Prod. Accum.
A															452			413
													4	405	452	4	305	865
B															263			1101
													3	417	263	3		1364
C															333			1489
													3	488	333	4	345	1822
D															189			234
													2	460	189	2	350	423
E															842			2633
													7	468	842	10	371	3475
F												26			374			1231
										1		26	3	480	400	6	407	1631
Total or Average												26			2453			7101
										1		26	22		2479	29		9580

•Number of wells having production.

Rock pressure expressed in pounds and square inch.

Production in million cubic feet.

SUMMARY

Rock Pressure—Averages and Production by Areas

Area	1919			1920			1921			1922			1923			March 1924 Rock Press.	Average Initial Daily Open Flow Million Cu. Ft.	Approx. Date of Initial Drilling
	*No. of Wells	Ave Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.	*No. of Wells	Ave. Rock Press.	Years Prod.—Prod. Accum.			
A	8		568 1433	7		261 1694	9		344 2038	9	30	137 2175	9		101 2276		4 381	1917
B	4	305	669 2033	4		590 2623	4		465 3088	4	158	494 3582	4	118	250 3832	100	2 876	1917
C	4		898 2720	4		660 3380	5	(280)	352 3732	4	256	680 4412	4	225	605 5017	Est. 190	3 193	1917
D	6	203	190 613	13	178	1269 1882	12	(81)	699 2581	13	60	527 3108	13	50	351 Est. 3459	40	2 024	1917
E	10	267	2499 5974	10		2725 8699	10	170	1413 10112	11	147	1077 11189	11	121	920 12109	100	6 877	1917
F	6	(243)	1591 3222	9	348	1765 4987	12	313	2104 7091	12	245	1987 9078	12	225	1875 10953	191	3 060	1917
Total or Average	38		6415 15995	47		7270 23265	52		5377 28642	53		4902 33544	53		4102 37646		3 735	

*Number of wells having production.
Rock Pressure in pounds per square inch.
Production in million cubic feet.

TRIPLE STATE POOL

SUMMARY SHOWING

ROCK PRESSURE AVERAGES AND PRODUCTION

Well No.	ROCK PRESSURES												1922 Calculated Production Mil. Cu. Ft.	1923 Calculated Production Mil. Cu. Ft.	Initial Open Flow Mil. Cu. Ft.	Initial Rock Press.	Date Drilled	Producing Sand
	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924						
68				158	150	130	•125	115	125	80	(58)	70	5	10	2 007	275	1899	B. L. & Inj.
88				180		165		130	(130)	95	(75)	92	20	36	1 108	275	7-1899	Max. & B.L.
98				165	160	(180)	135	127	155	110	(78)	105	16	27	1 452	260	Before 1912	Injun
																130 to 180	12-20-04	B. L. & Salt
101							Abd.											
105				(250)	(240)	285	270	260	225	(170)	200	245	3	6		320	3-3-05	Big Lime
112				•485	•485	483	475	471	476	400	410	410	42	68	1 411	(370)	1-15-06	Injun
327	•220			155	•140	(117)	133	116	(130)	73	85	80	6	9	2 000	240	7-9-11	B. L. & Inj.
409	•250			150	•140	(117)	124	•130	(155)	75	90	90	15	20	232	267	10-3-12	Injun
446	•225			165	140	125	(105)	•120	115	60	37	50	4	5	3 893	225	12-10-12	Injun
447	•205					128	125	•130	138	75	60	80	11	17	1 360	205	1-20-13	Inj.& Squaw
450						(172)	•190	(160)	179	150	165	150	9	14		230	2-26-13	Berea
529	480			424	•450	•450	415	•440	480	430	385	400	23	31	605	485	8-7-12	Injun
531	410			375		310		280	230	•222	(265)	220	11	18	387	410	9-11-13	Berea
535						Abd.											7-23-13	Big Lime
547				•225	•200	175	170	140	(185)	120	110	125	32	56	839	405	1-3-14	Inj.& Squaw
744				455	•460	462	•450	441	439	D. O.	375	D. O.	1	23	350	355	8-21-16	Injun
854						458		433	(455)	340	365	360	33	44	500	370	3-19-14	Big Lime
855						220		190	(264)	110	105	120	7	6	528	455	5-28-15	Big Lime
59						342	336		(378)	Abd.					850	420	9-4-97	Max. & B.L.
60						211	173	130	192	120	125	104	5	10	4 000	360	1899	Big Lime
64				(163)	•175	167	157	•157	155	90	(65)	69	7	15	3 988	310	4-7-02	B.L.& Inj.
65							Abd.								637	248	3-24-04	Injun
66				238	•210	194	158		135	113	130	125	2	6	2 218	265	8-3-99	Big Lime
67				161	•145	(125)	137	•132	128	85	72	71	3	4	1 914	270	1899	Injun
70				153	145	Abd.											10-15-99	Maxon
74				153	146	125	125	121	120	118	•112	109	4	6	2 000	175	6-29-1900	Maxon
75	450			406	•390	371	280			•230	225	196	10	8	351	450	11-23-13	Big Lime
76				154		(112)	120	115	110	117	D.O.		2		3 000	188	9-21-00	Maxon
78							Abd.								970	460	10-1900	Maxon
84				161			106	85	69	75	D.O.	75	3	4	2 880	160	1-21-01	Maxon
86				153	145	(103)	130	100	80	(122)	75	D.O.	4	8	2 807	155	10-21-01	Maxon
87				159	112	106	105	D.O.			D.O.				2 166	(175)	12-7-01	Maxon
92				•300		•300	•300		300	265	275	275	11	28	970	400	11-16-02	Maxon
93	510			•430	•390	350	337	318		221	257	250	3	5	151	510	5-23-13	B. L. & Inj.
94				(161)	•175	168	155	•155	(154)	90	60	74	4	4	2 738	(280)	1-11-04	Injun
95						341	320		307	255	•240	235	5	6	865	(262)	2-3-12	Big Lime
96	•245			182		(124)	125	•120	115	(30)	52	67	2	1	476	260	12-2-12	Big Lime
97				197			150	125	125	80	D.O.	D.O.	4	1	800	(265)	7-27-04	Maxon
102				270					270	260	D.O.	D.O.	5		585	390	7-11-05	Big Lime
104				170	(145)	160	147	135	(152)	95	75	79	4	4	9 419	(270)	1-28-05	Injun
106				(230)	(200)	280	255	185	(267)	144	150	100	9	22	4 073	453	5-16-05	B.L. & Max.
107				180	•175	174	170	•170	(175)	137	135	138	4	6	3 926	450	7-12-05	B.L. & Inj.
108				175		(134)	135	125	120	100	95	86	2	3	800	(275)	8-29-05	Max.& B.L.

TRIPLE STATE POOL

SUMMARY SHOWING

ROCK PRESSURE AVERAGES AND PRODUCTION—Continued

Well No.	ROCK PRESSURES												1922 Calculated Production Mil. Cu. Ft.	1923 Calculated Production Mil. Cu. Ft.	Initial Open Flow Mil. Cu. Ft.	Initial Rock Press.	Date Drilled	Producing Sand
	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924						
109							Abd.								134	345	8-24-05	Injun
110						Abd.									702	370	8-10-05	Maxon
113				(185)	(135)	164	158	140	(162)	100	92	103	6	14	6 313	380	2-7-06	Big Lime
408	•275			250		230	190	165	(189)	(108)	140	•120	1	1	096	310	8-21-12	Maxon
502	230			157		125	131	•125	121	76	62	75	3	8	465	230	4-11-13	Big Lime
592				289		280			295	262	270	280	6	14	1 136	295	3-14-14	Maxon
647				274		250	243	219	(270)	205	220	215	9	21	452	288	11-9-14	Maxon
648						252	205	(131)	203	(100)	(100)	125	2	2	500	170	4-3-18	Big Lime
652				370	•310	249	210		213	(110)	(102)	135	1	1	3 147	440	1-16-15	Big Lime
720			425	•410	•400	390	•385	•385	385	335	325	321	9	21	300	425	10-20-15	Big Lime
765				355	•335	321	320	280	(307)	265	257	250	6	12	075	350	6-15-15	Big Lime
822				365		294	263		232	195	185	180	17	37	1 361	365	9-9-16	Maxon
823						305	•280		268	150	150	111	2	9	744	(210)	10-31-16	Big Lime
847				•290		195	122	101	95	70	62	65	2	3	559	275	12-30-16	Maxon
868					190	(126)	190	180	(111)	170	120	75	1	18	528	170	4-24-17	Maxon
887					295	240	210	200	D.O.		D.O.	154	1	1		295	5-26-17	Maxon
890					346	306	•280	260	243	200	180	175	23	40	1 350	320	4-13-17	Maxon
922					380	156	135	108	111	80	•75	75	1	1	134	380	5-18-17	Maxon
923						209	(160)	185	188	168	165	(215)	6	10	287	220	8-2-17	Big Lime
959					155		103		55	D.O.	D.O.	60			3 750	155	9-28-17	Maxon
995						135	•125	•115	110	100	90	83	23	33	304	250	10-13-17	B.L. & Inj.
1004					140		101	86	55	70	63	37	6	16	3 959	140	9-22-17	Maxon
Total No. Wells	3500		425	9339	7084	10781	10184	8245	7362	7381	6921	7289	456	793	95 552			
Ave	11		1	37	29	43	50	44	38	47	43	50	55	53	59			
Cum. Prod. (Mil. Cu.Ft.)	318		(425)	252	244	251	204	187	194	157	161	146			1 620			
	373	1,236	2,862	4,971	7,757	9,286	11,205	13,115	14,286	14,742	15,535							

•Estimated.

D. O.—Well drowned out.

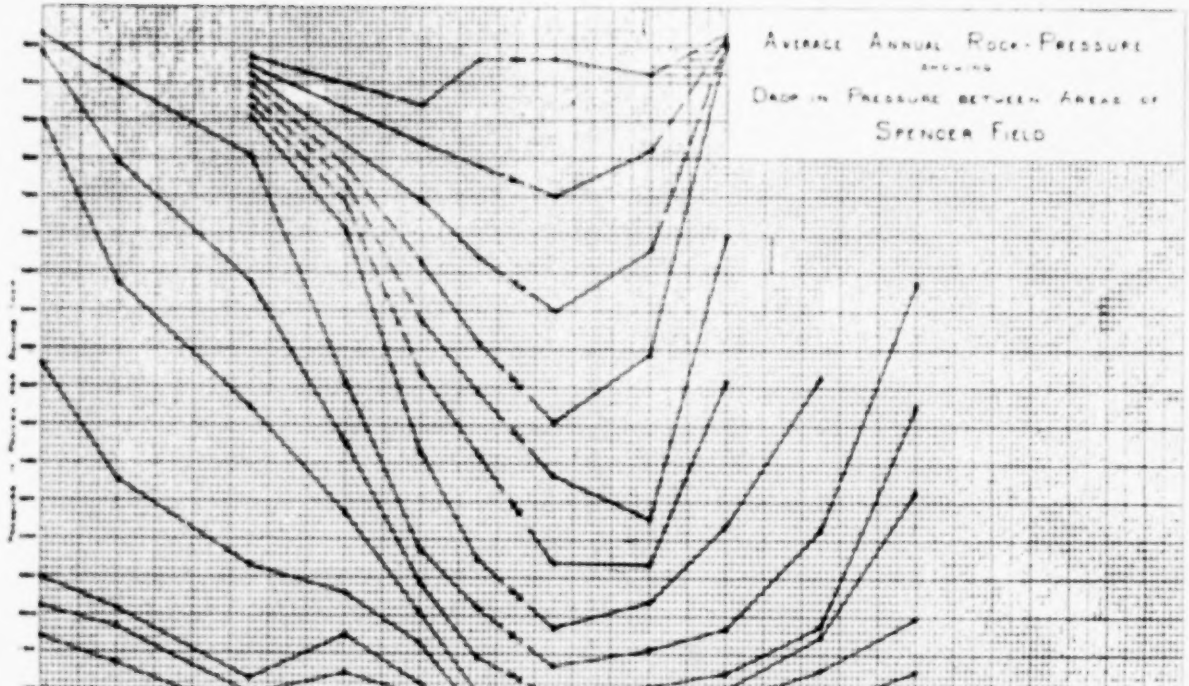
SECTION III

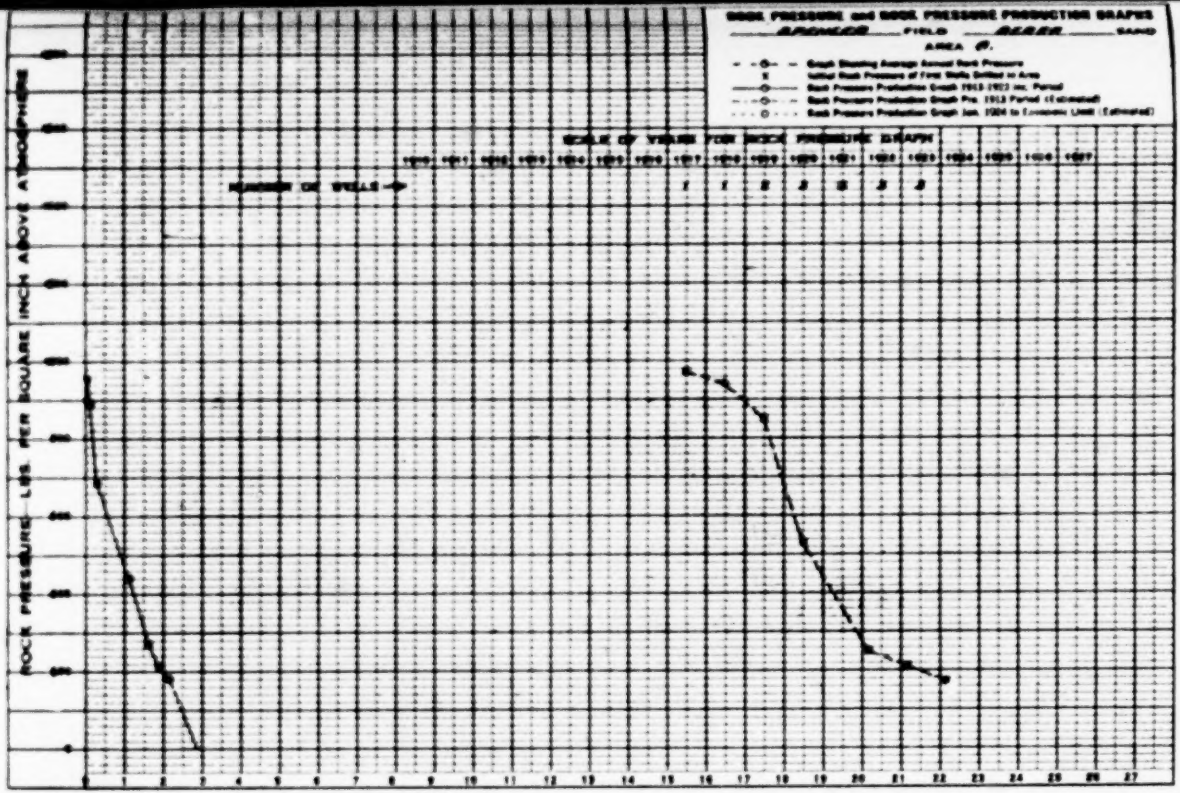
PRODUCTION GRAPHS

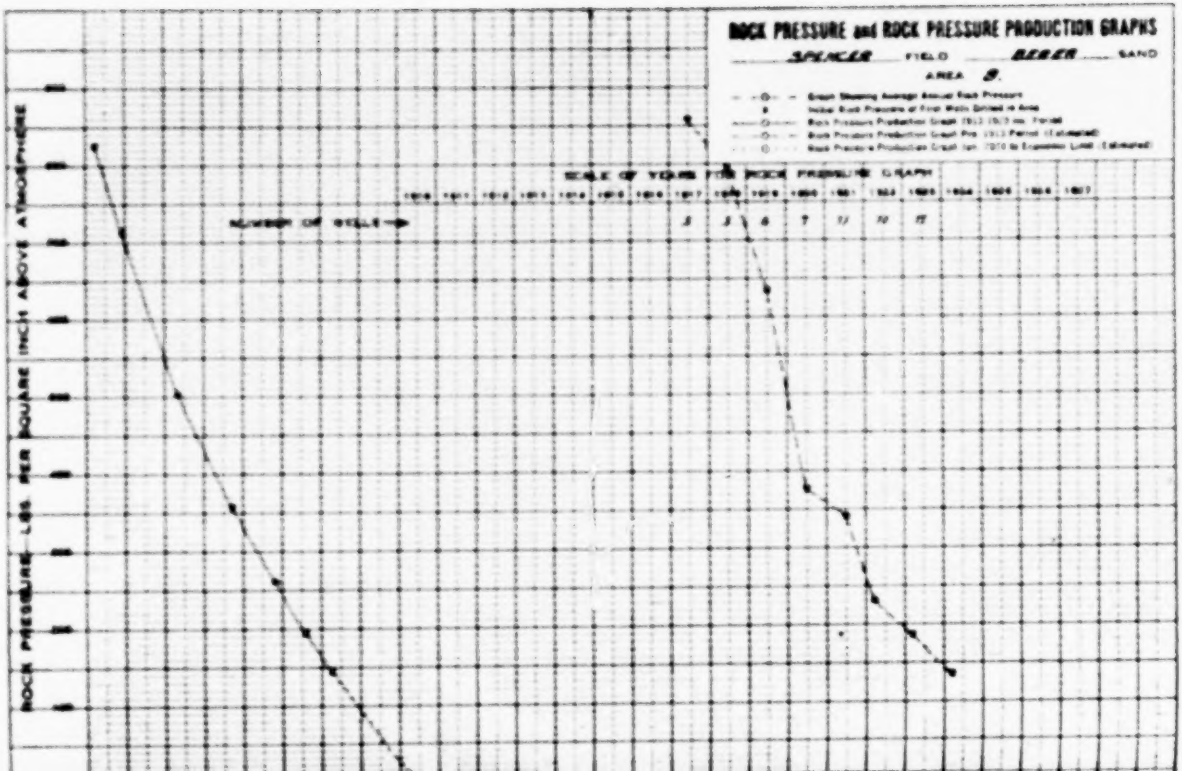
Rock Pressure Drop per Mile—Spencer Pool

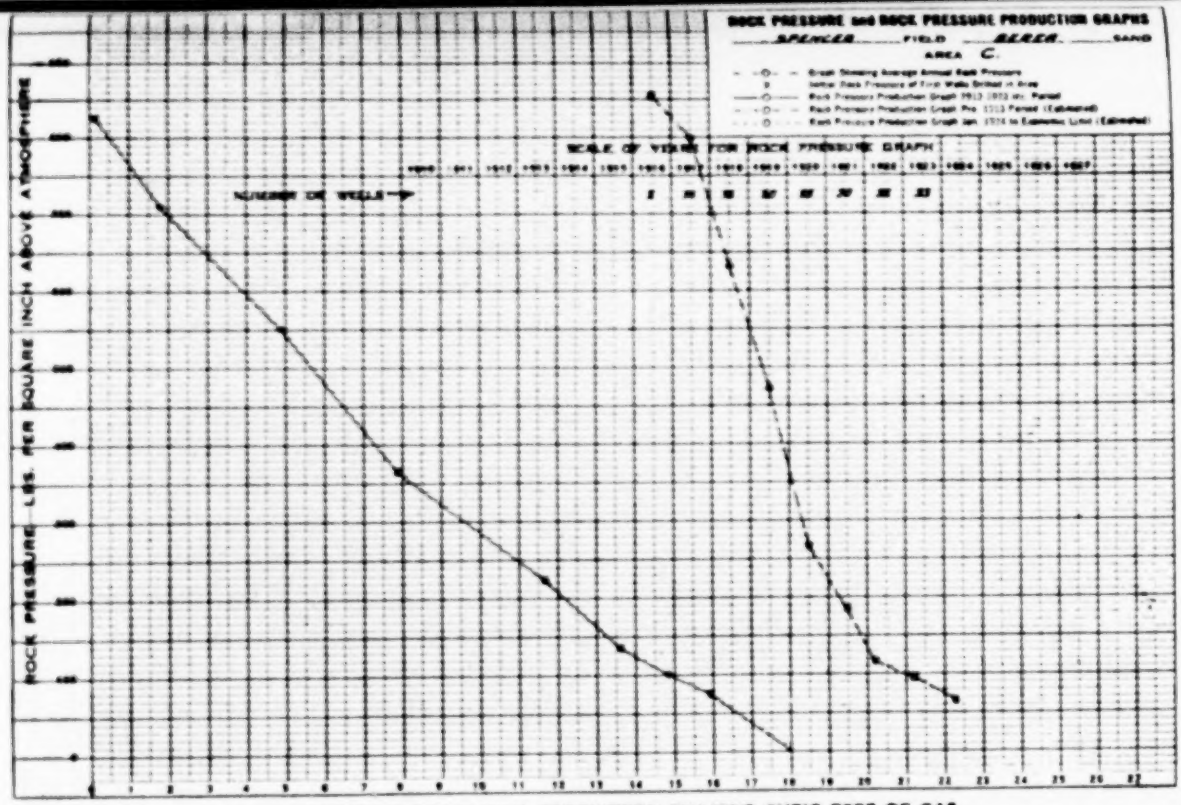
Rock Pressure and Rock Pressure—Production Graphs

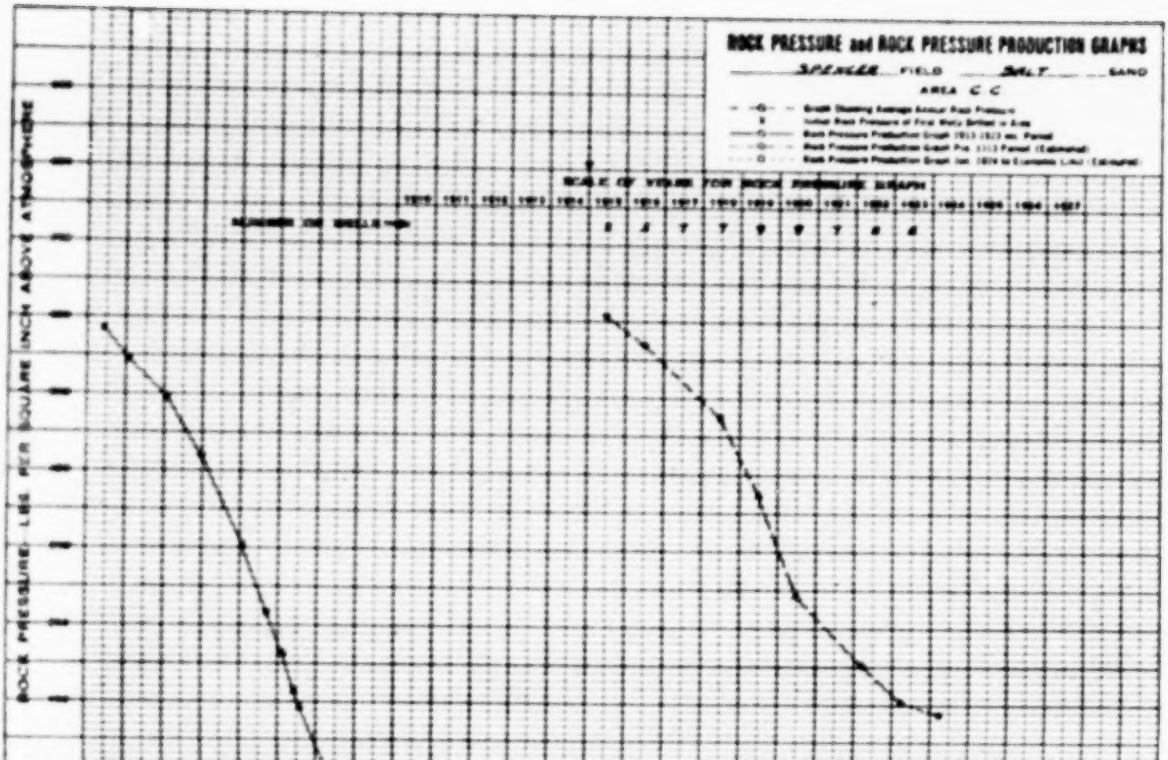
(Arranged by Fields and Areas)

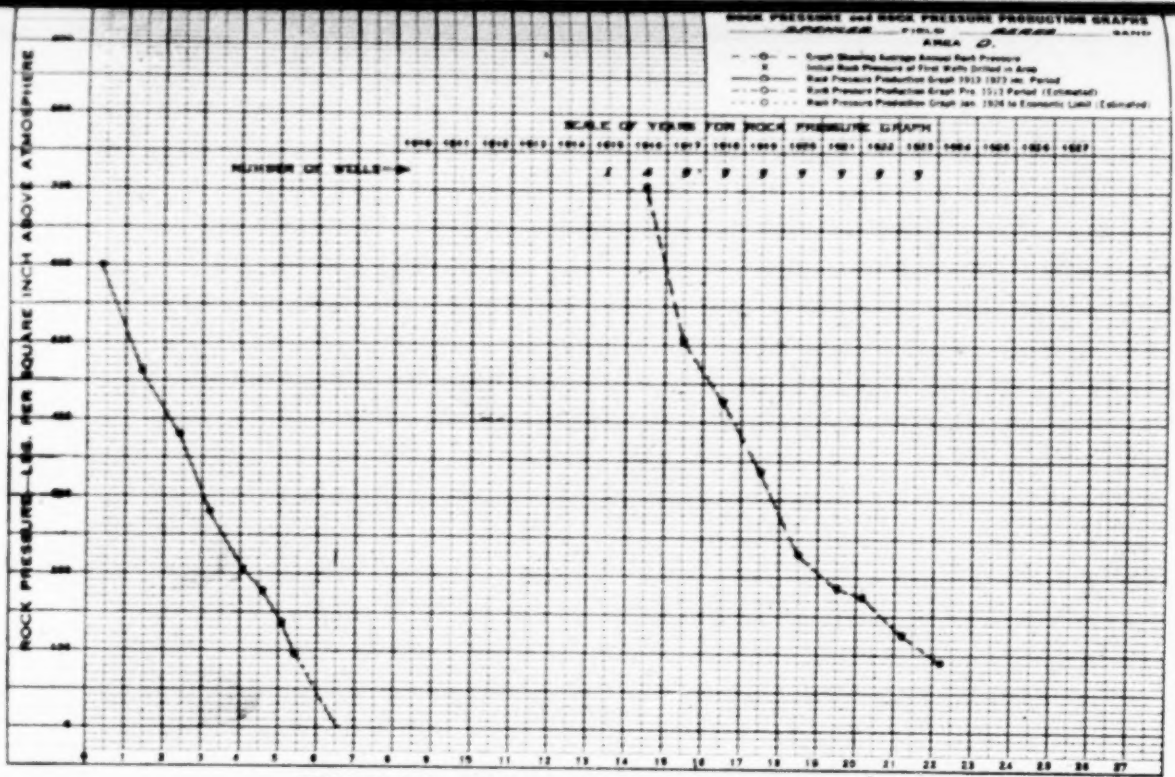

Average Annual Rock-Pressure
and the
Drop in Pressure between Areas of
Spencer Field

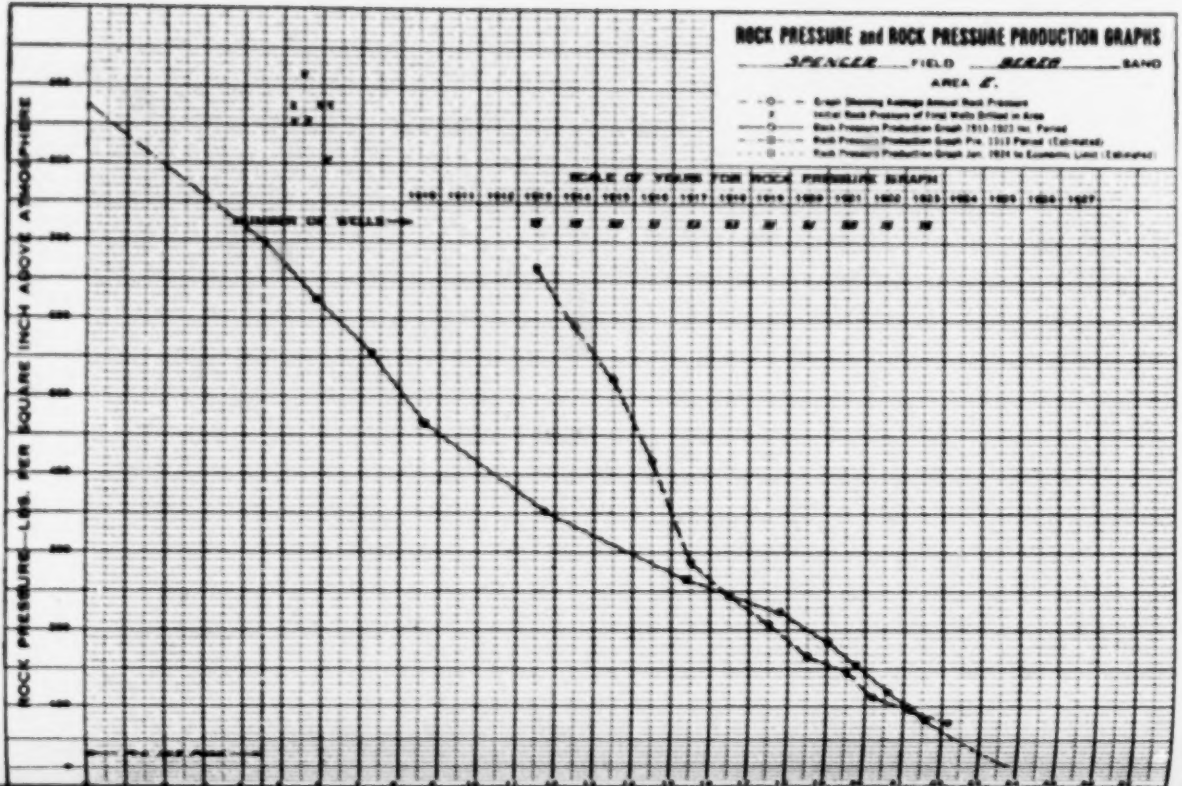

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
ARCHER FIELD ARBUCKLE SAND
AREA B.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph For 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917
NUMBER OF WELLS
1 1 2 3 3 3 3
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA B
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
NUMBER OF CYCLE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
1908 1911 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
3 3 6 7 11 11 11

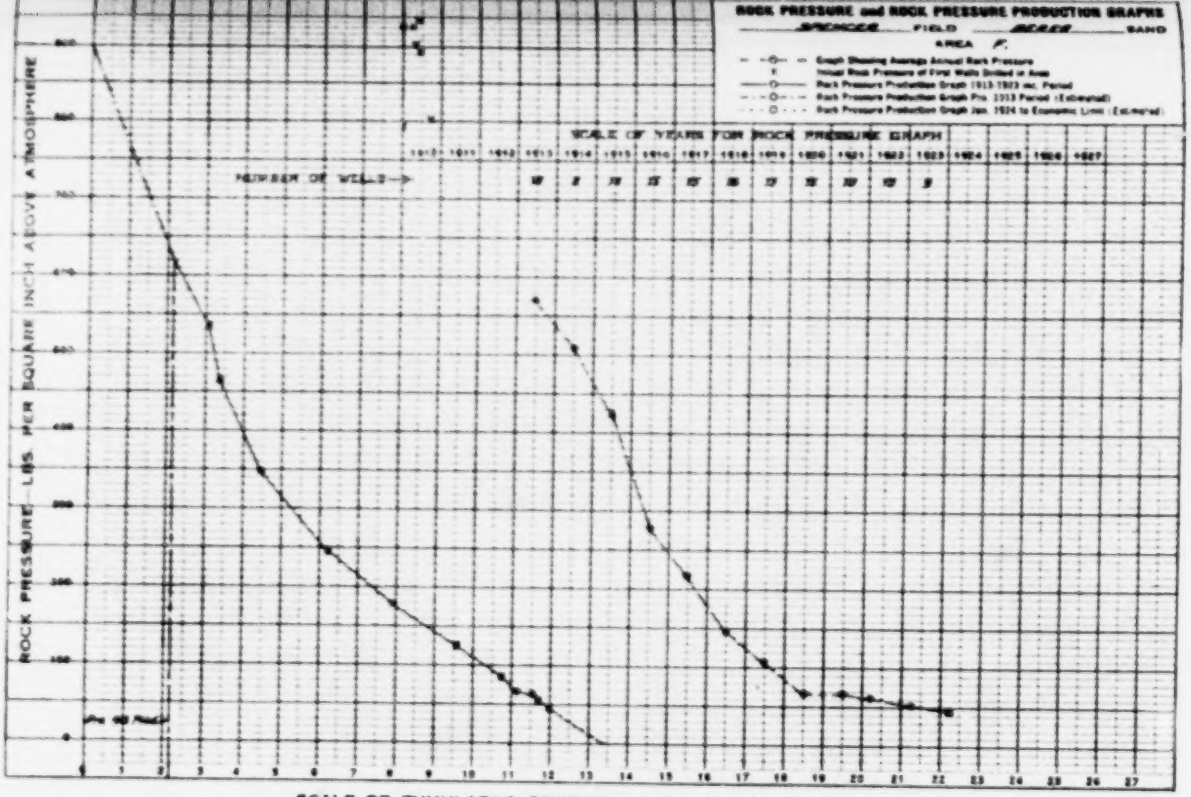

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA C
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

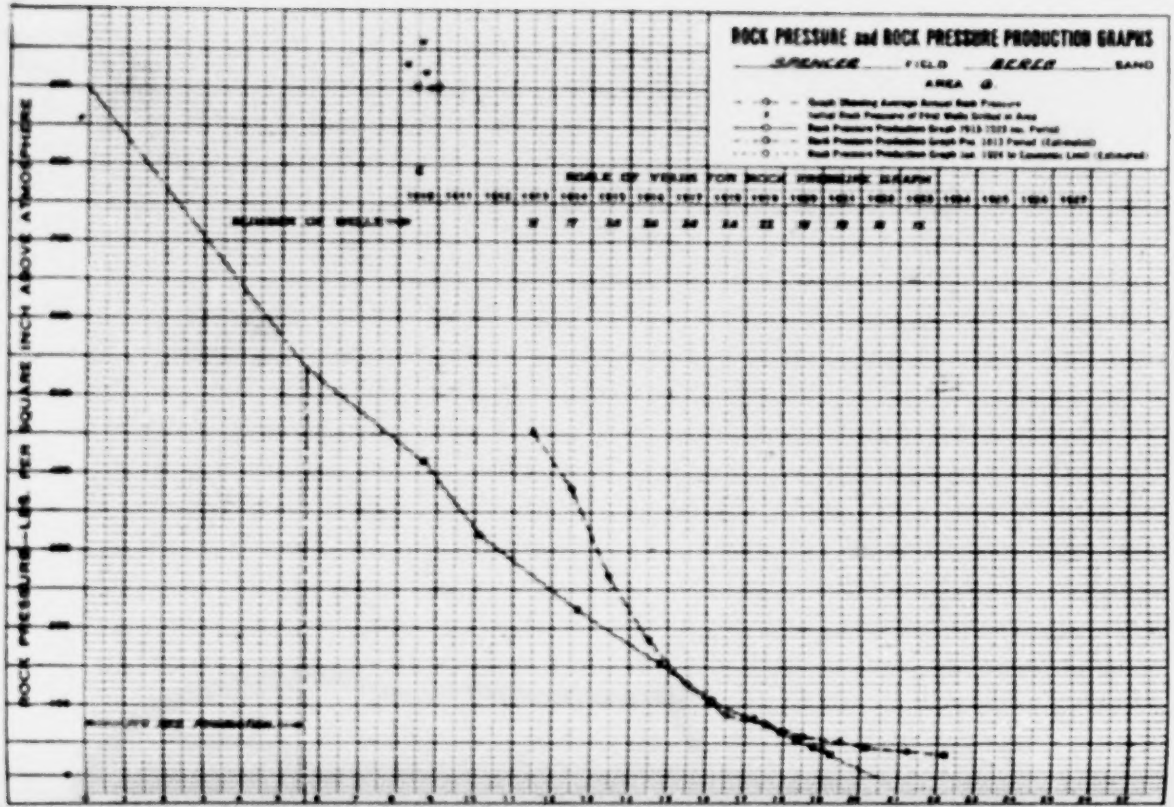

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD SALT SAND
AREA C C
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH

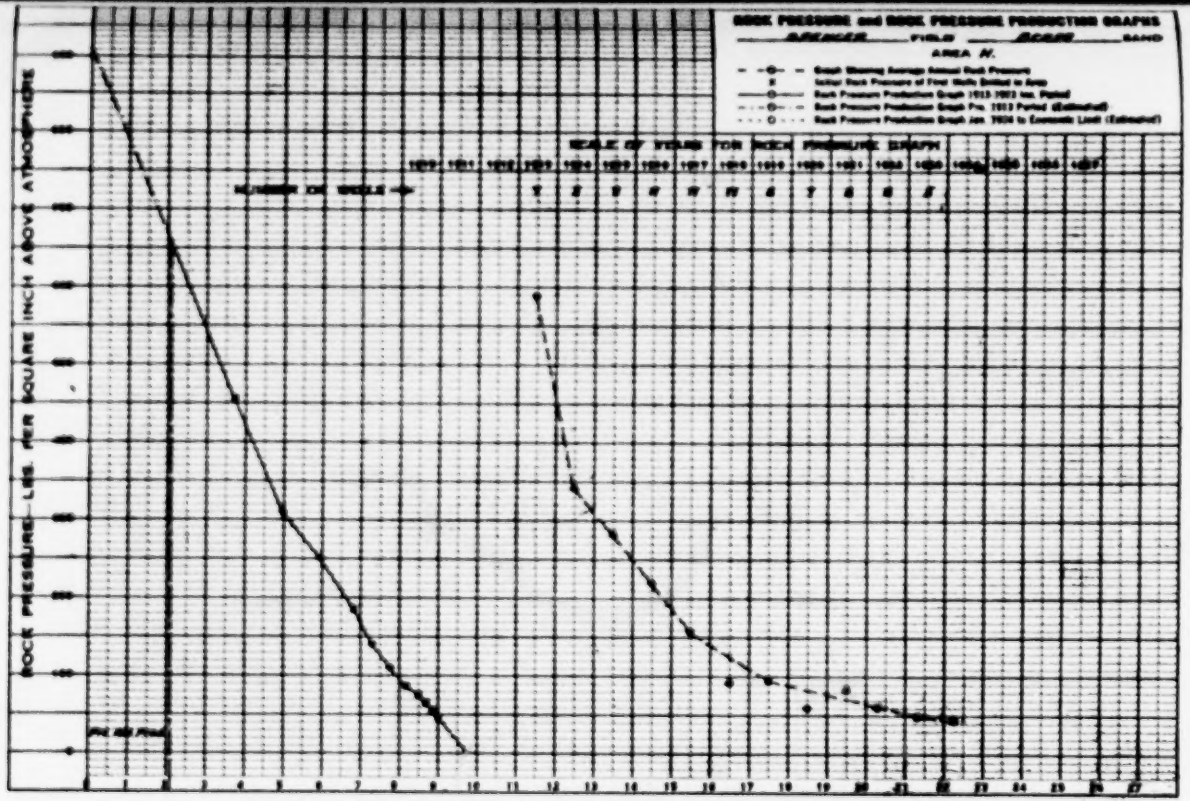

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA D.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

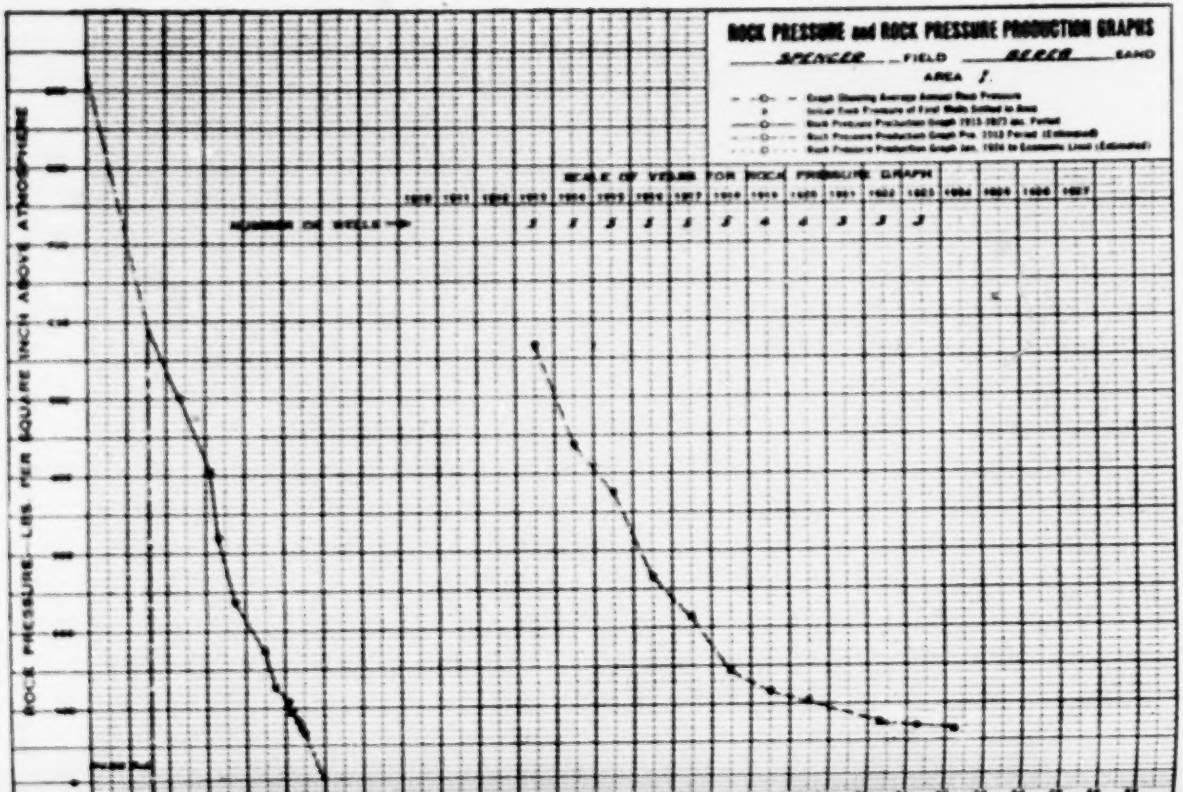

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA E.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE

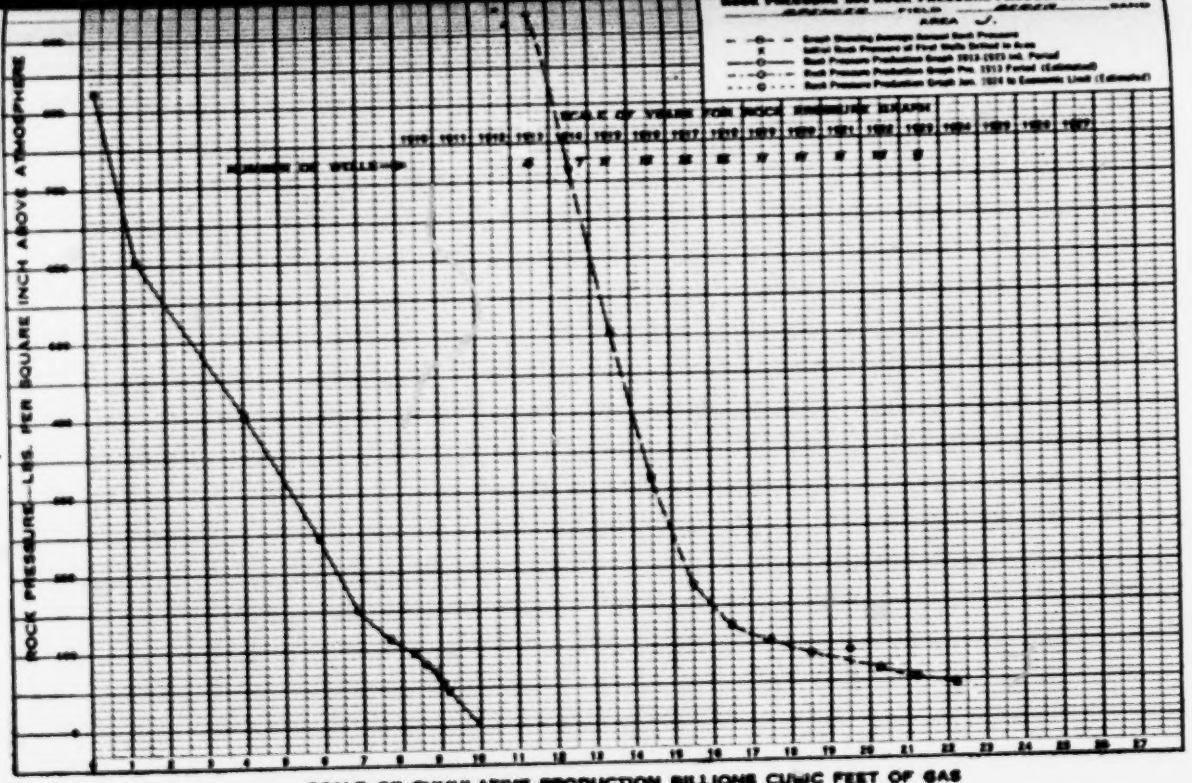
89

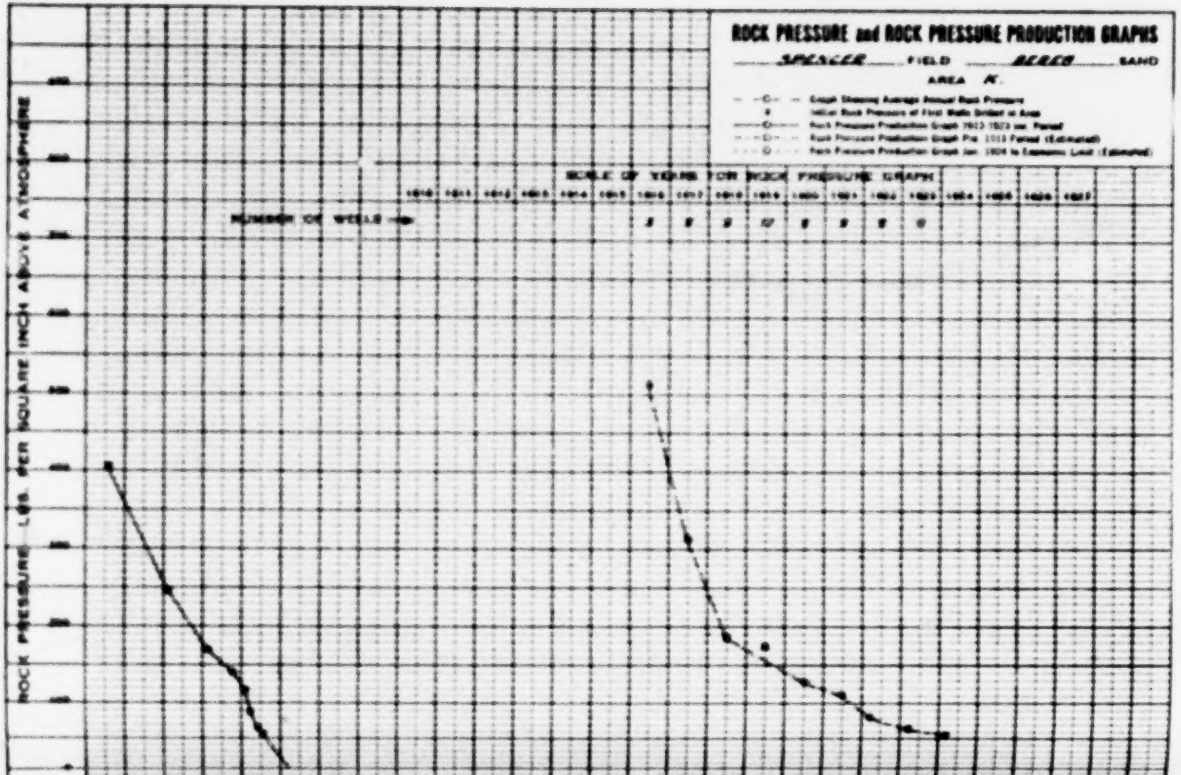

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
FIELD
SAND
AREA
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

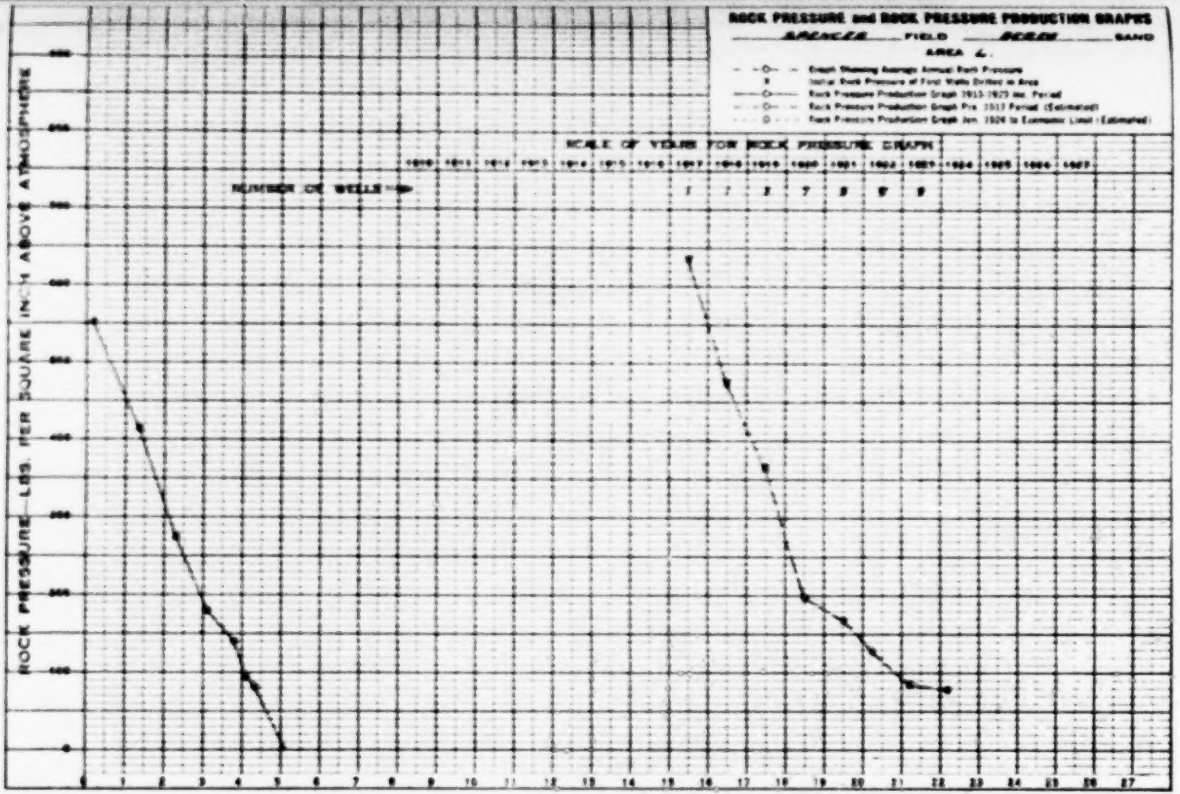

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD ACREA SAND
AREA B
ROCK PRESSURE—LBS PER SQUARE INCH ABOVE ATMOSPHERE

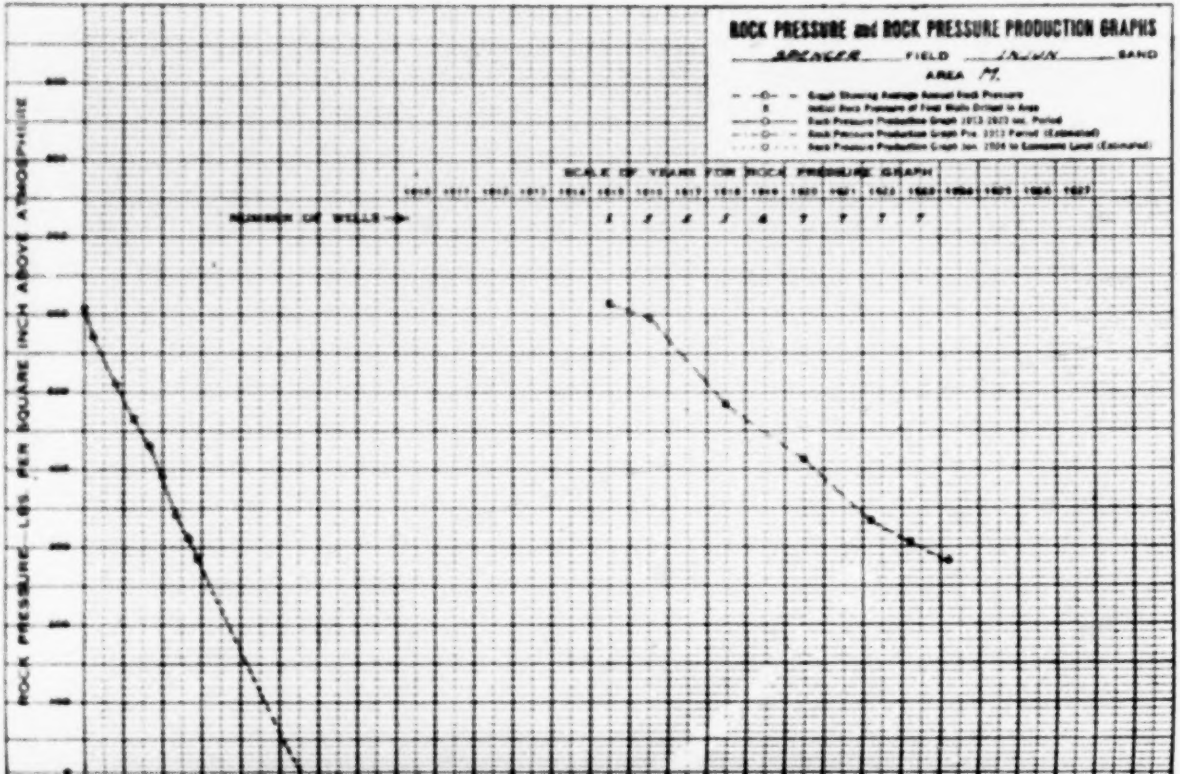

ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS
AREA N.


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA 1.
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS

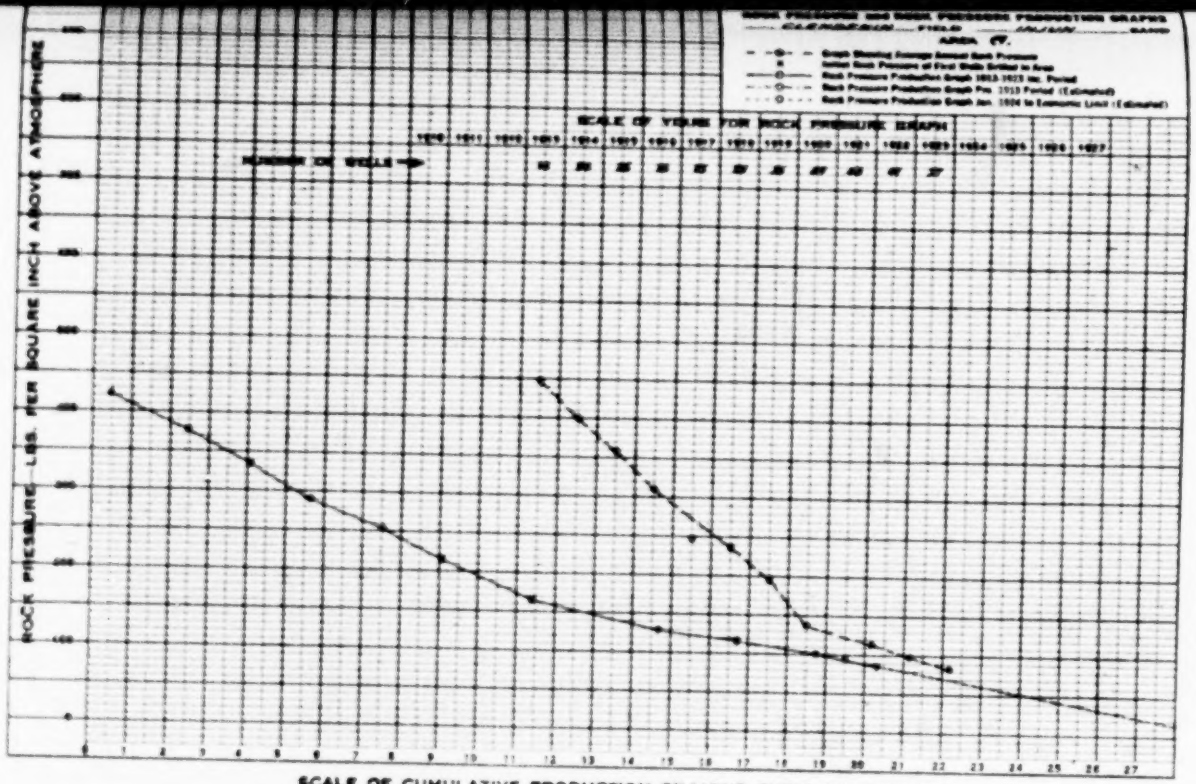

ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

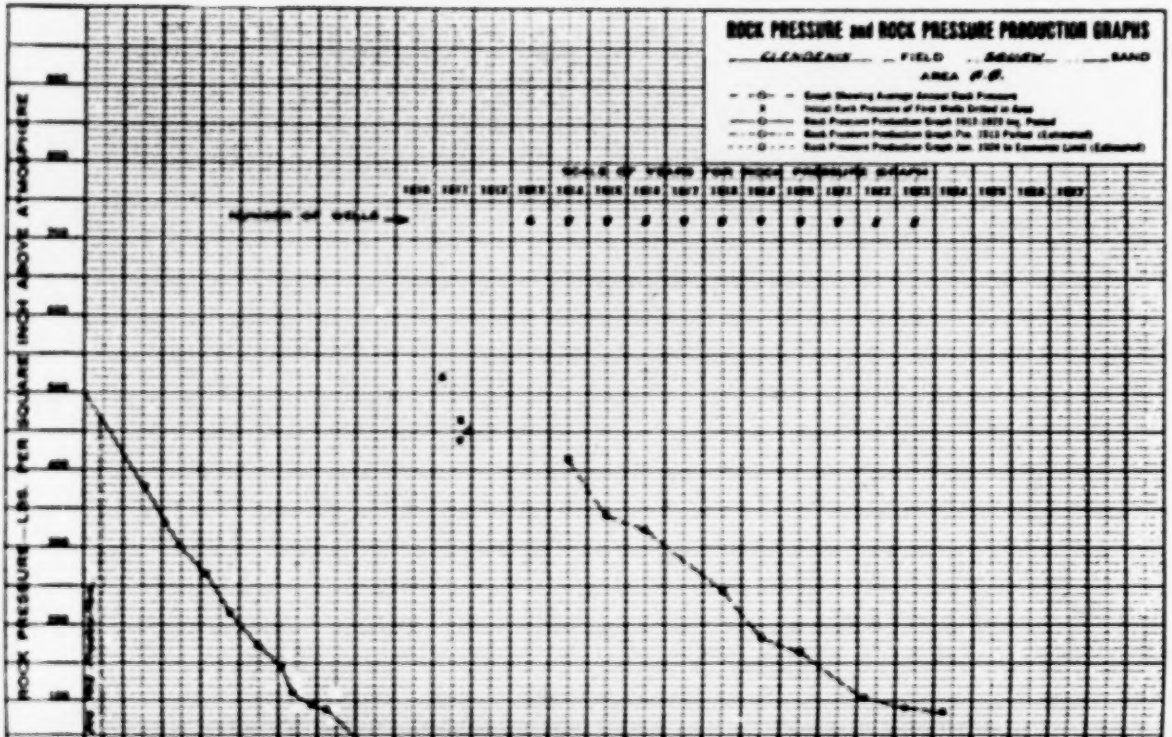

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
SPENCER FIELD BEREA SAND
AREA K
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE

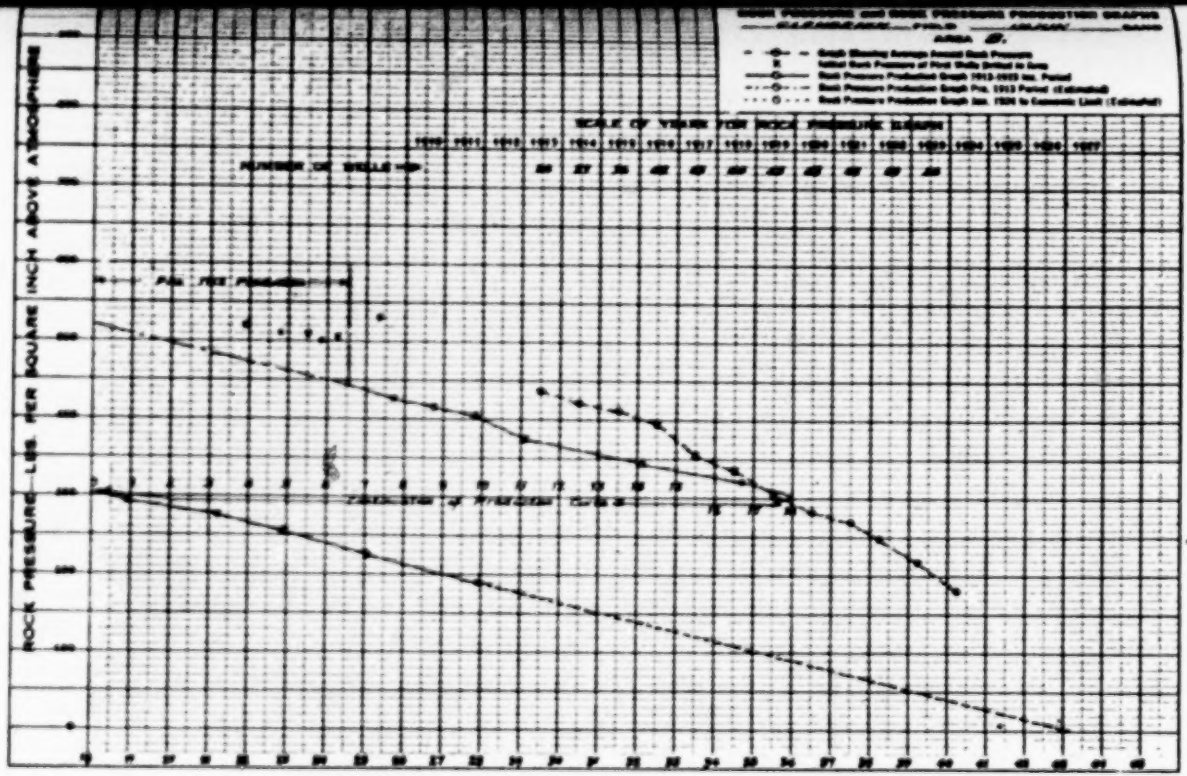

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
ARKANSAS FIELD BOSSIER SAND
AREA 4.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph Pro. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

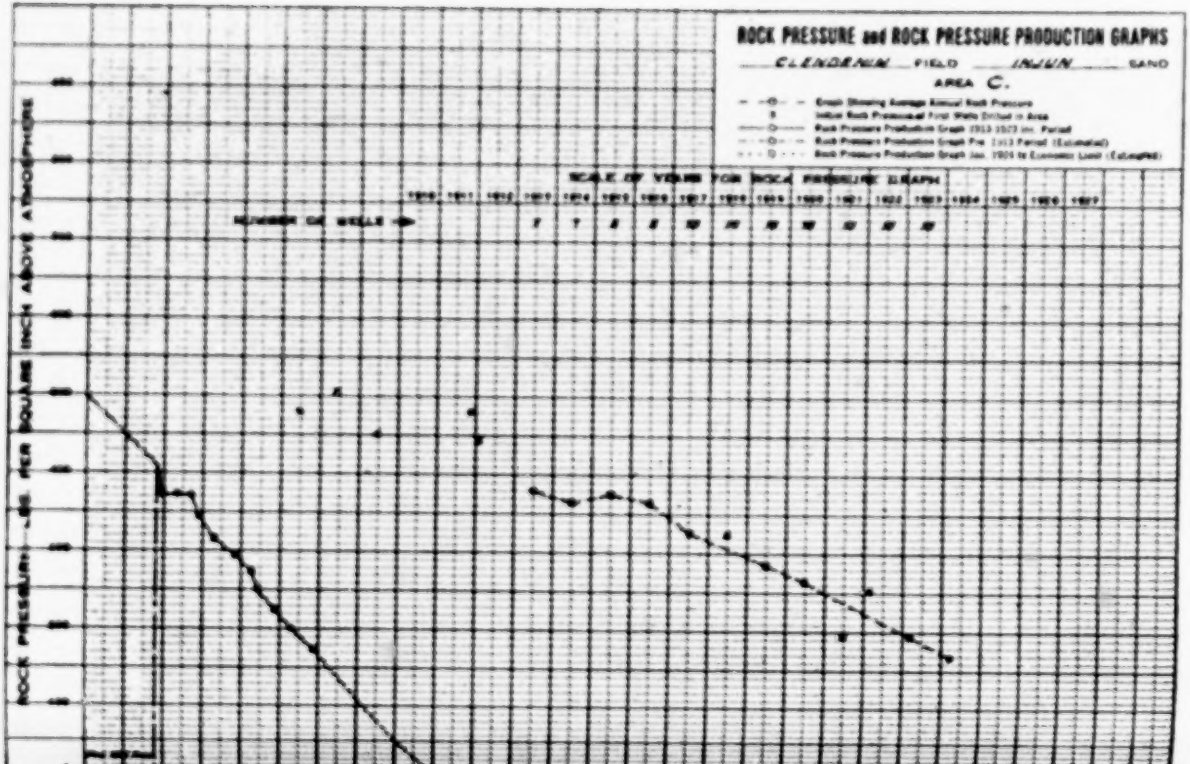

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
ARCHER FIELD JOHN SAND
AREA M.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
1 2 3 3 4 7 7 7 7
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE

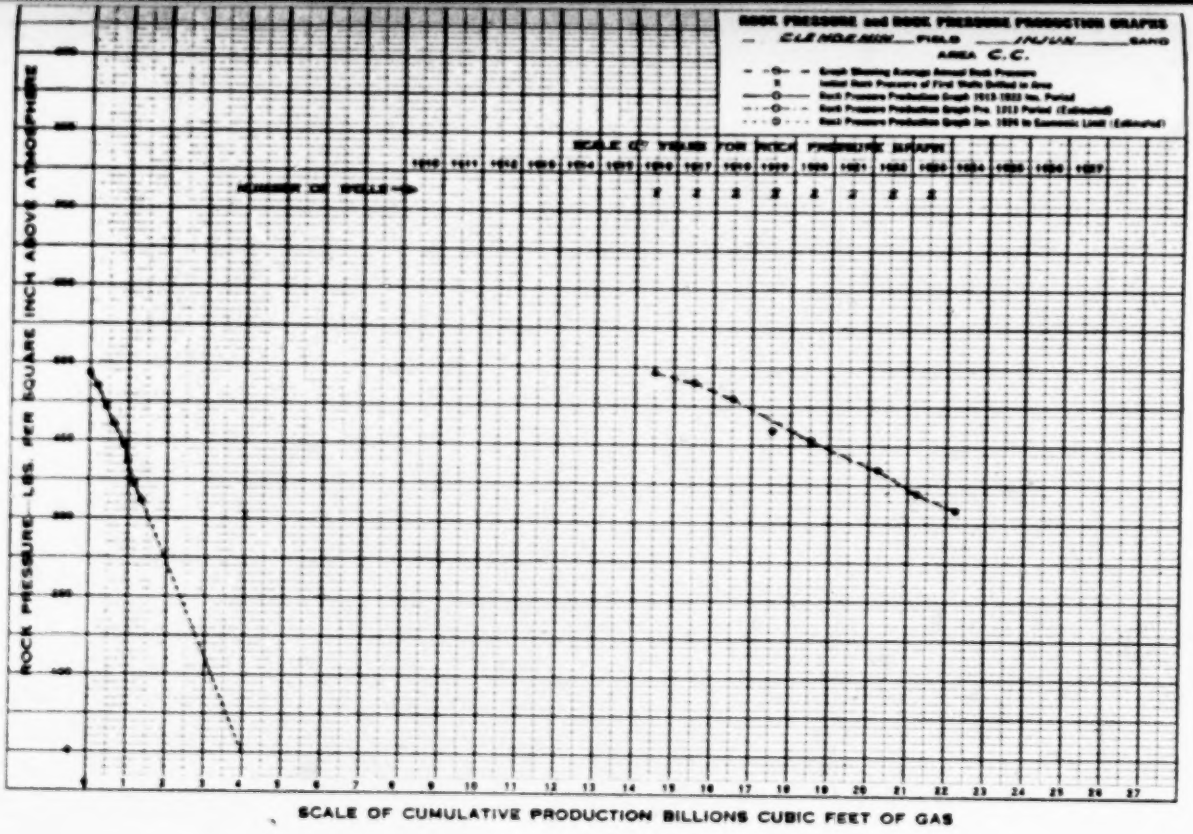
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF VOLUME FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

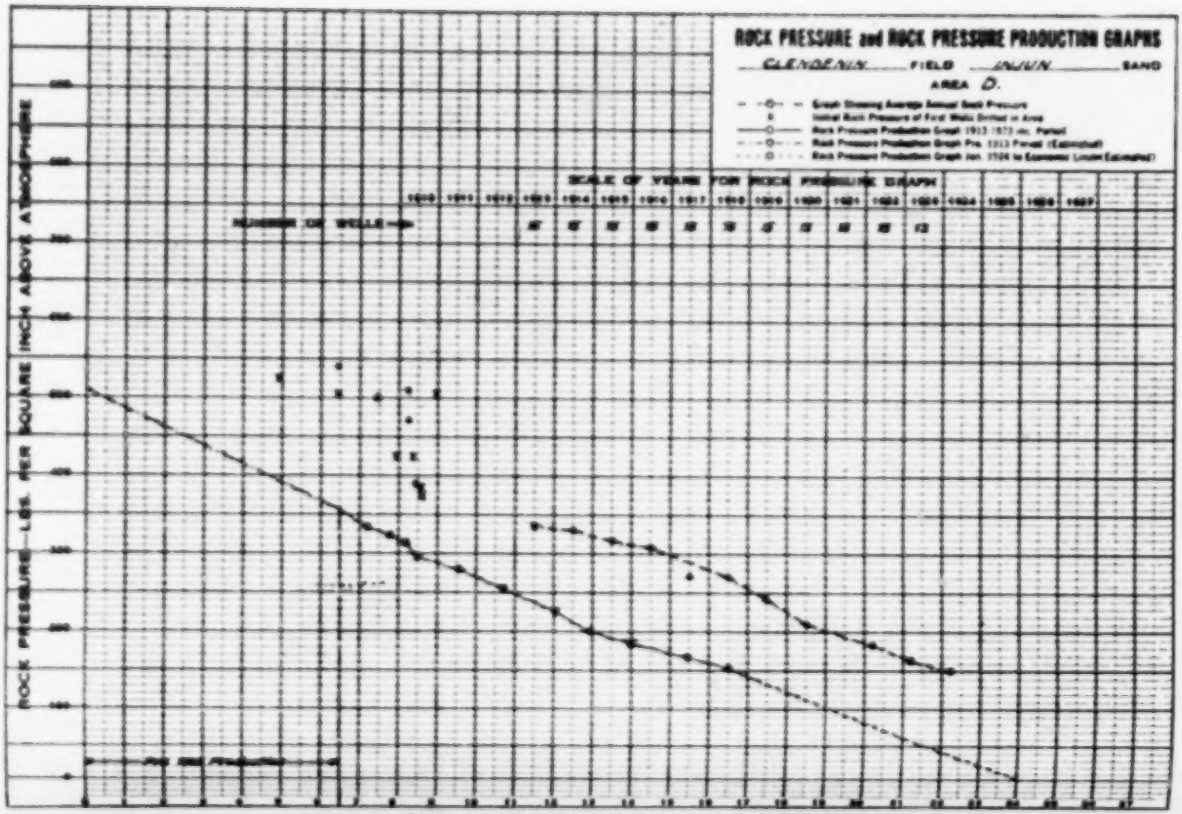

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENDEAN
FIELD
SAUREN
SAND
AREA
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

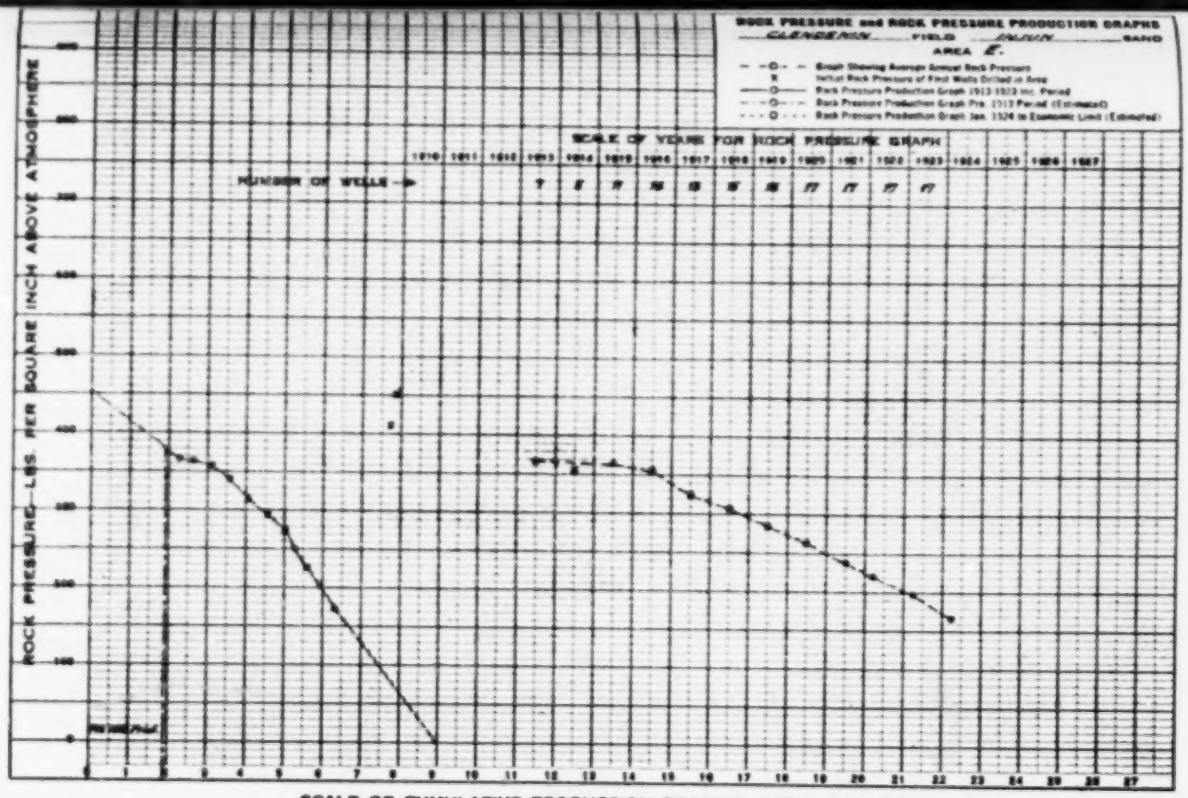

ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

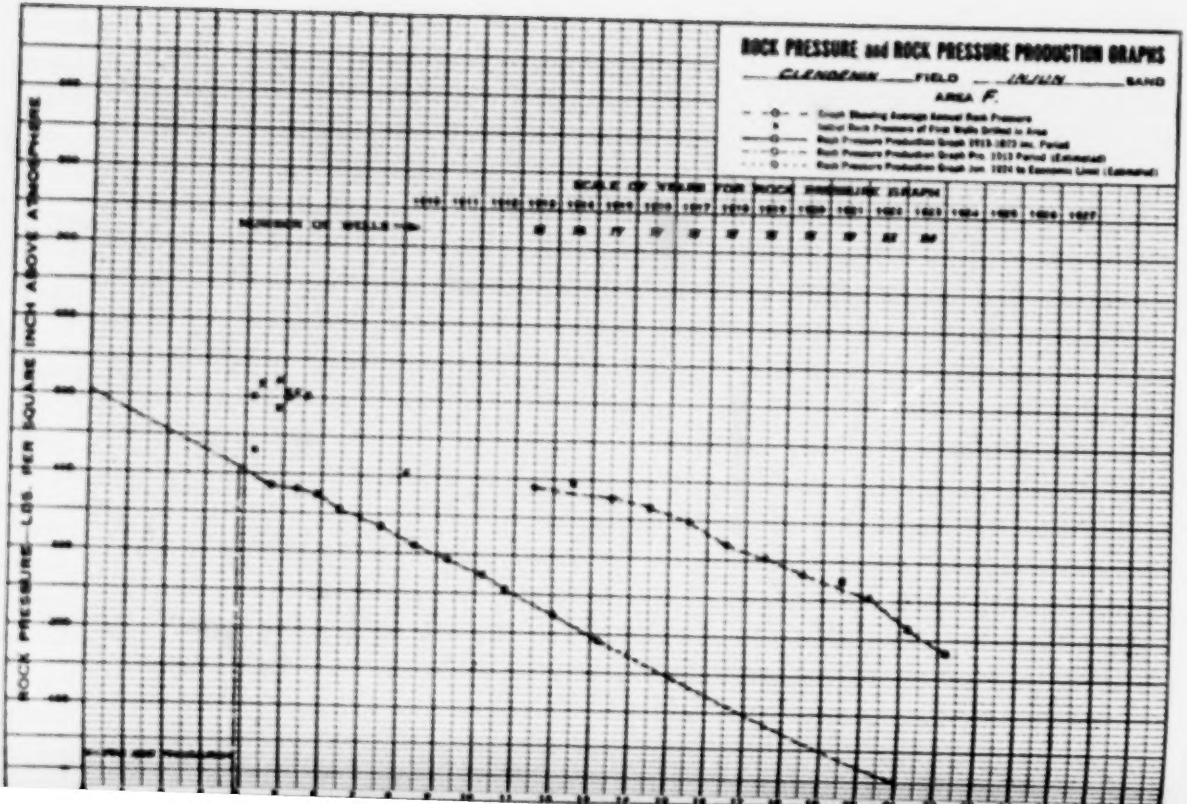

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD INJUN SAND
AREA C.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEVELAND FIELD MUSKINGUM SAND
AREA C.C.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

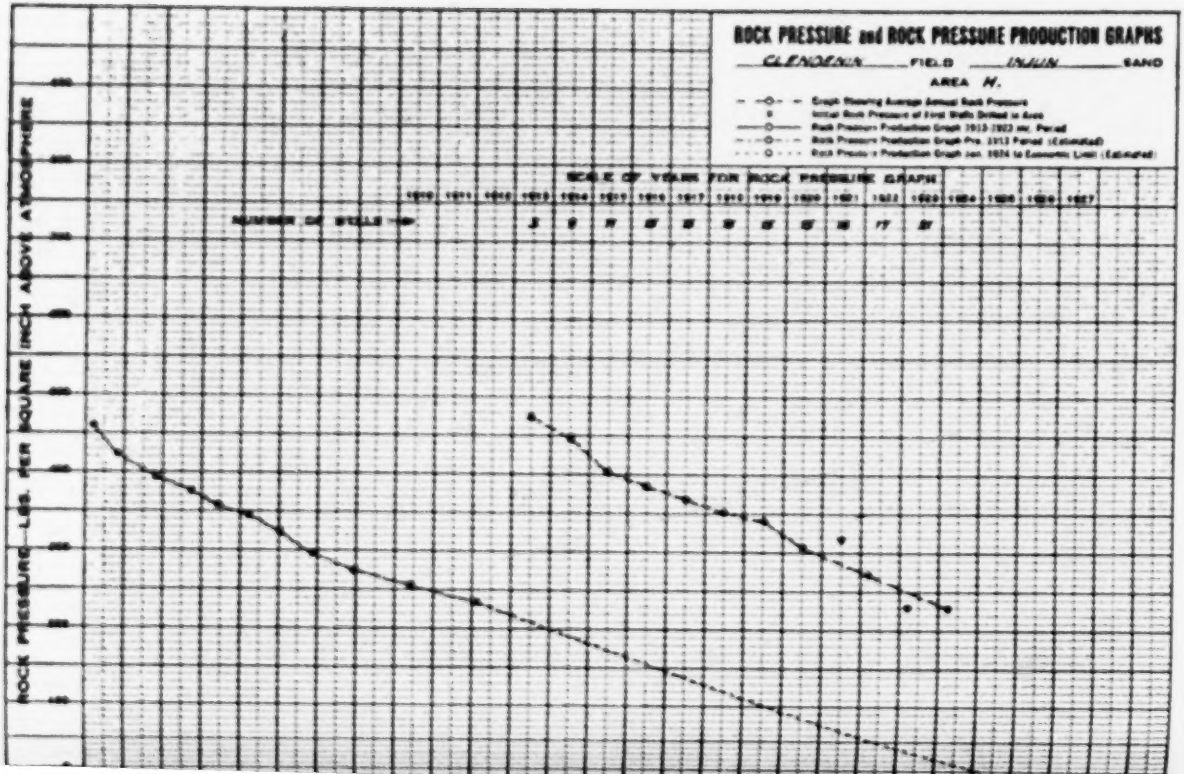
182

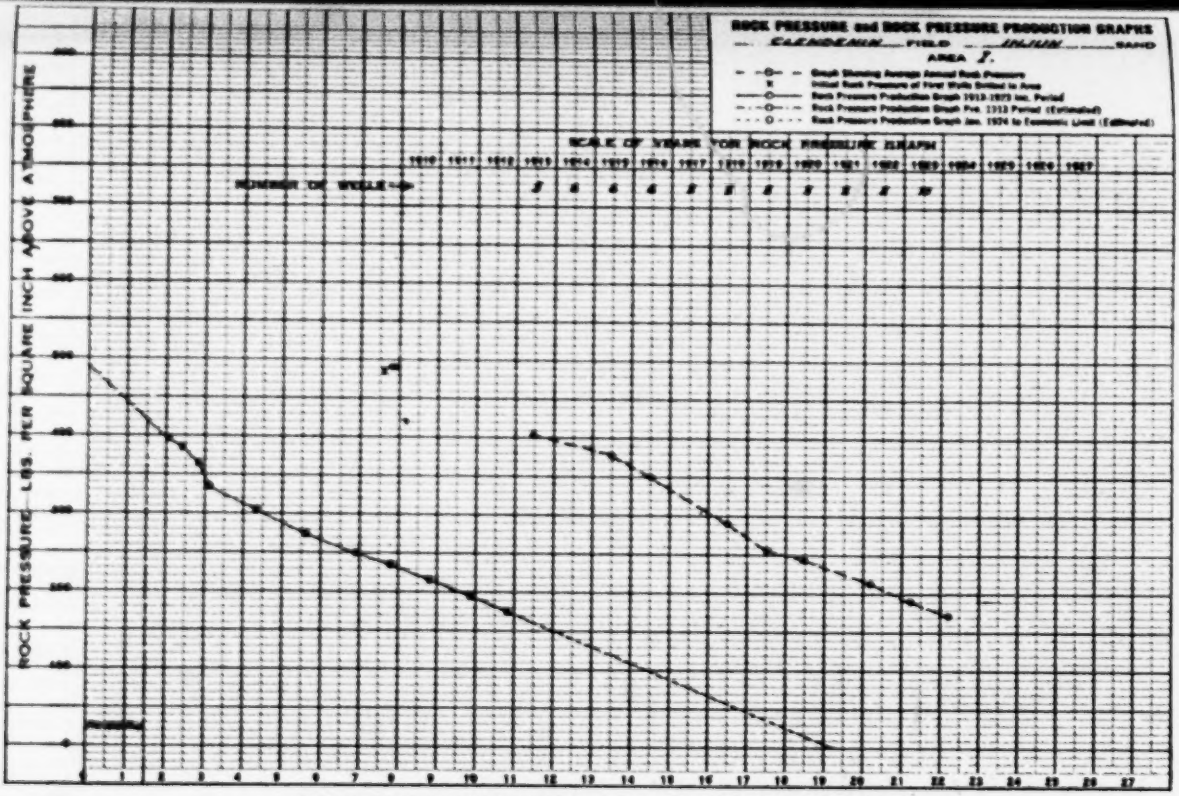

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENDEAN FIELD JOHN SAND
AREA D.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD DUNLAP SAND
AREA E.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 Inc. Period
Rock Pressure Production Graph Pro. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
NUMBER OF WELLS →
7 8 11 16 13 15 16 17 17 17 17
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

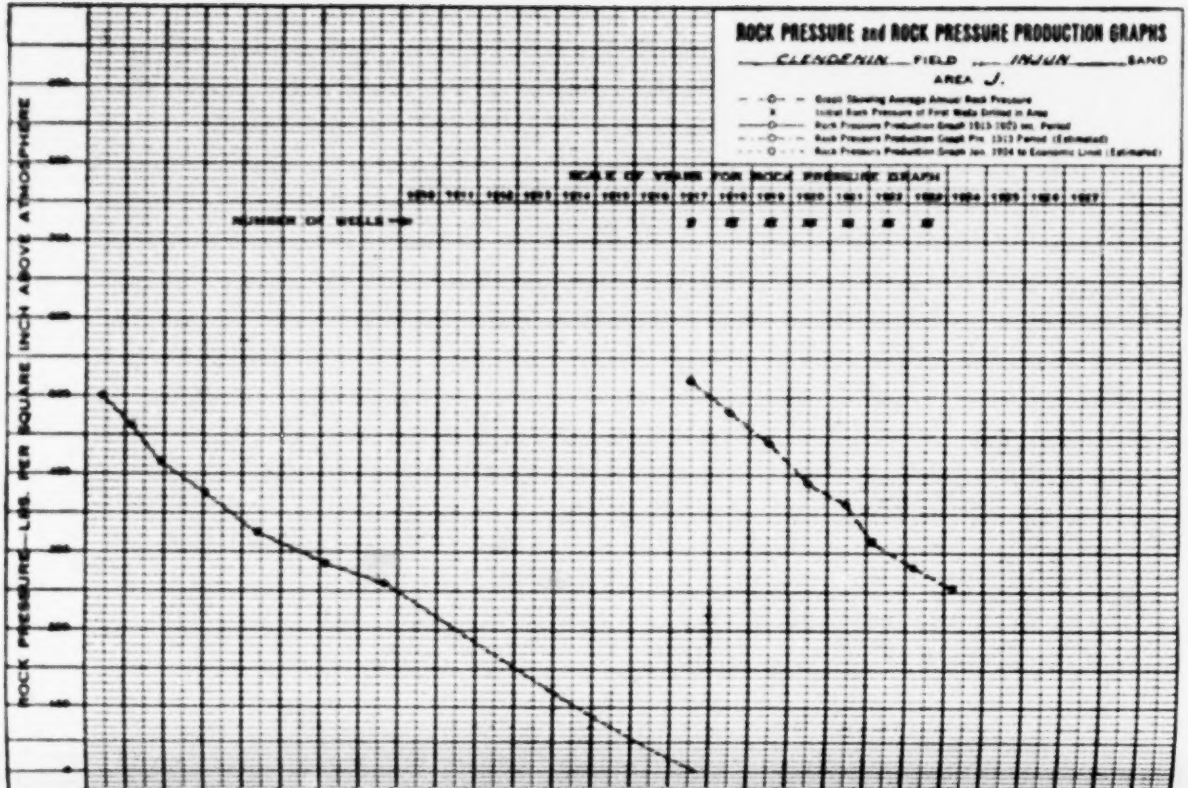

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD UNION SAND
AREA F.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

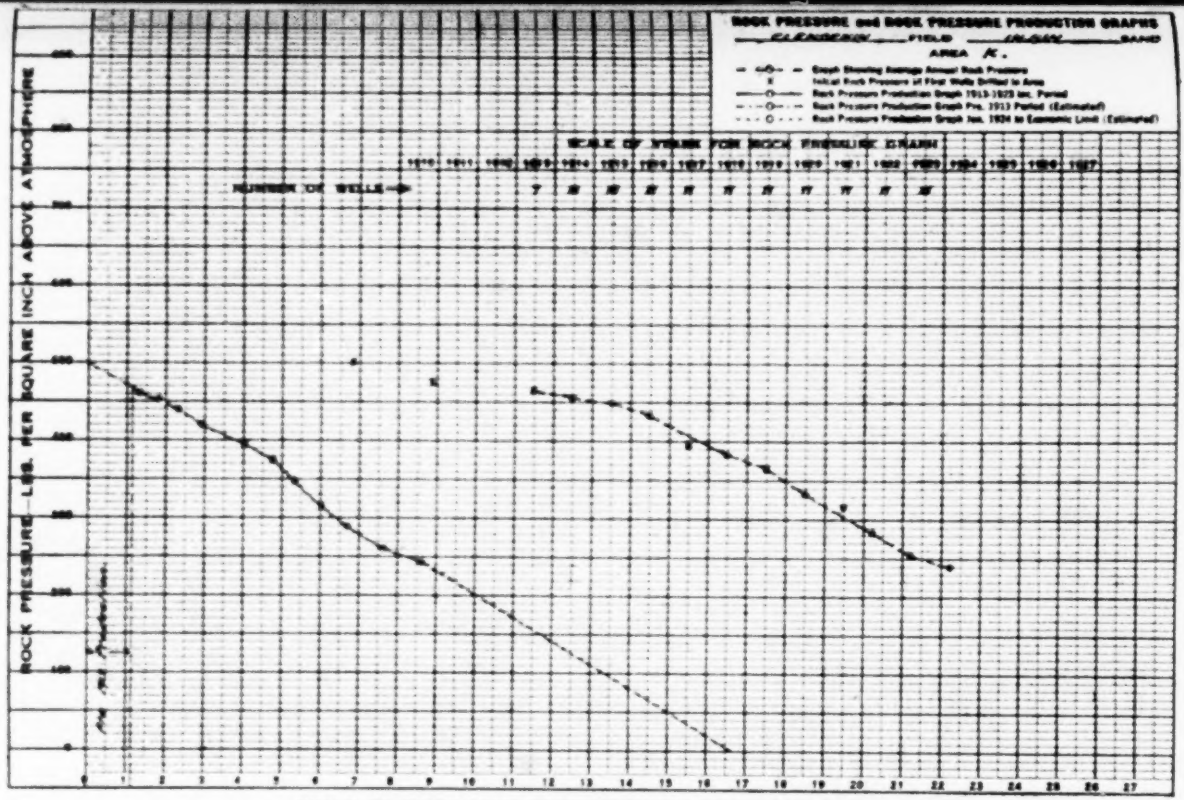
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

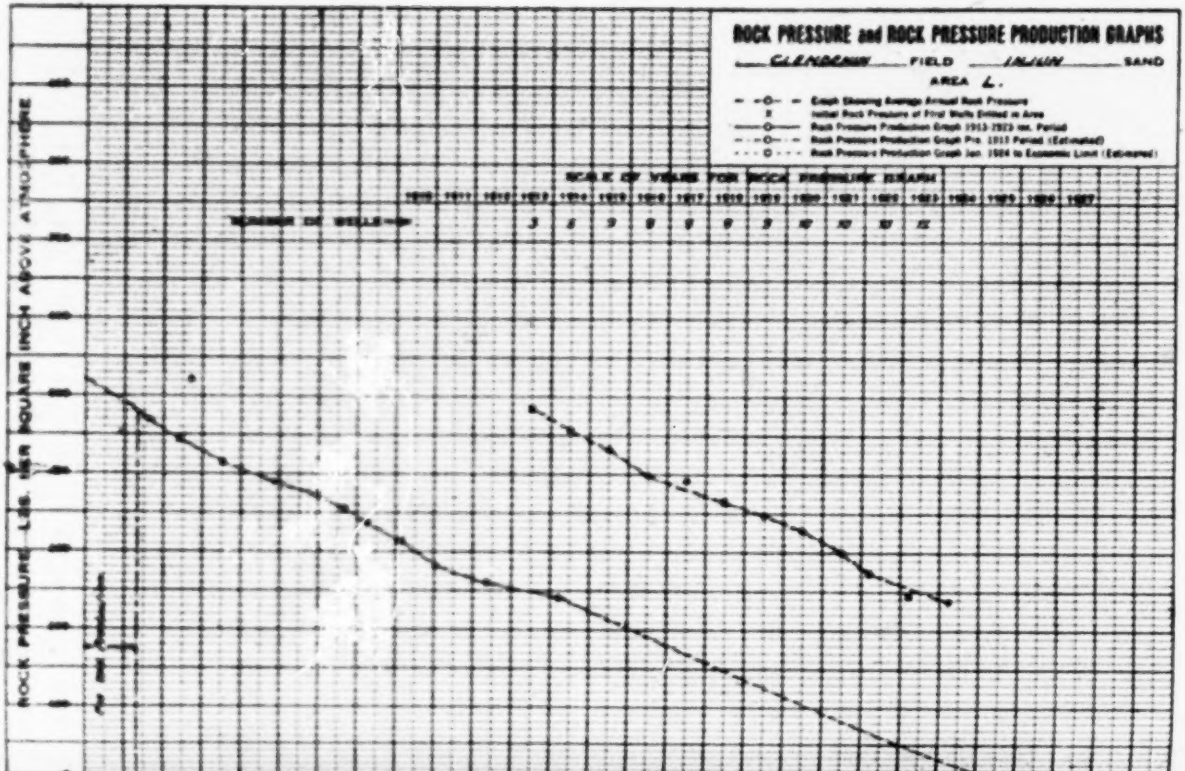

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENROCK FIELD INJUN SAND
AREA N.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE

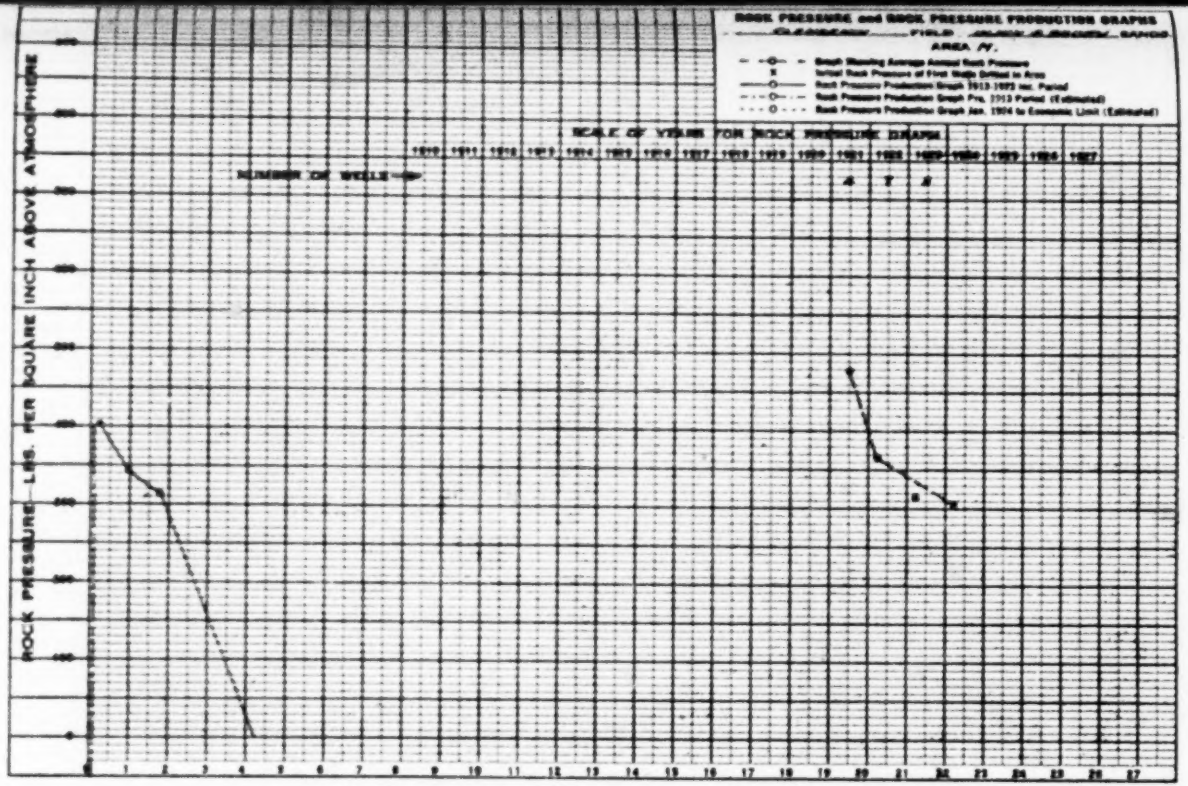

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD JULIUS SAND
AREA I.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph Pre. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

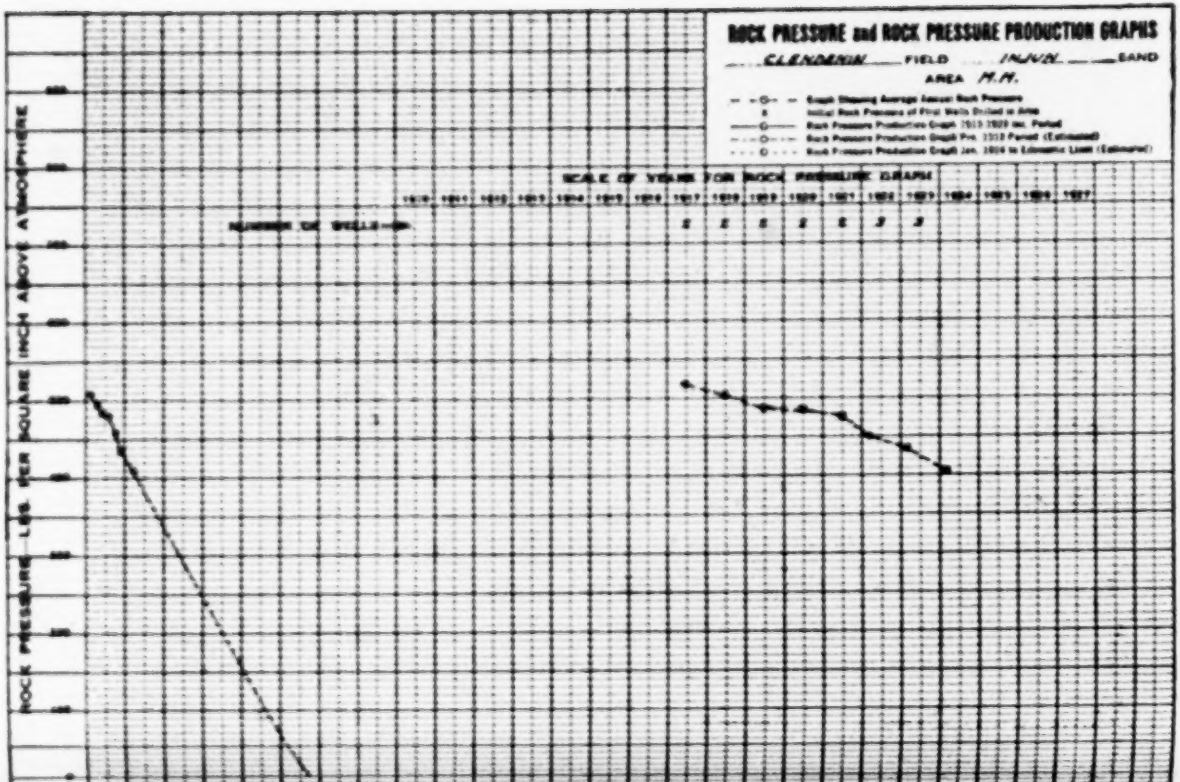
87

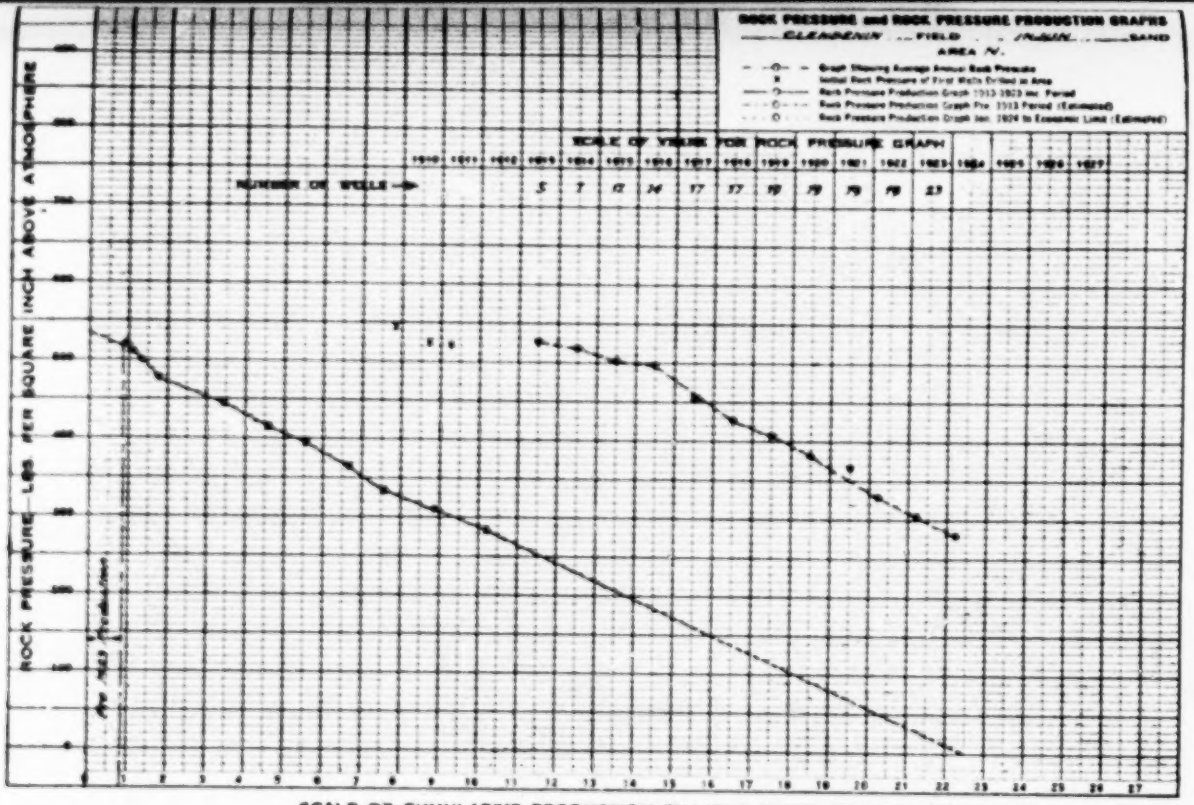

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD INJUN SAND
AREA J.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE

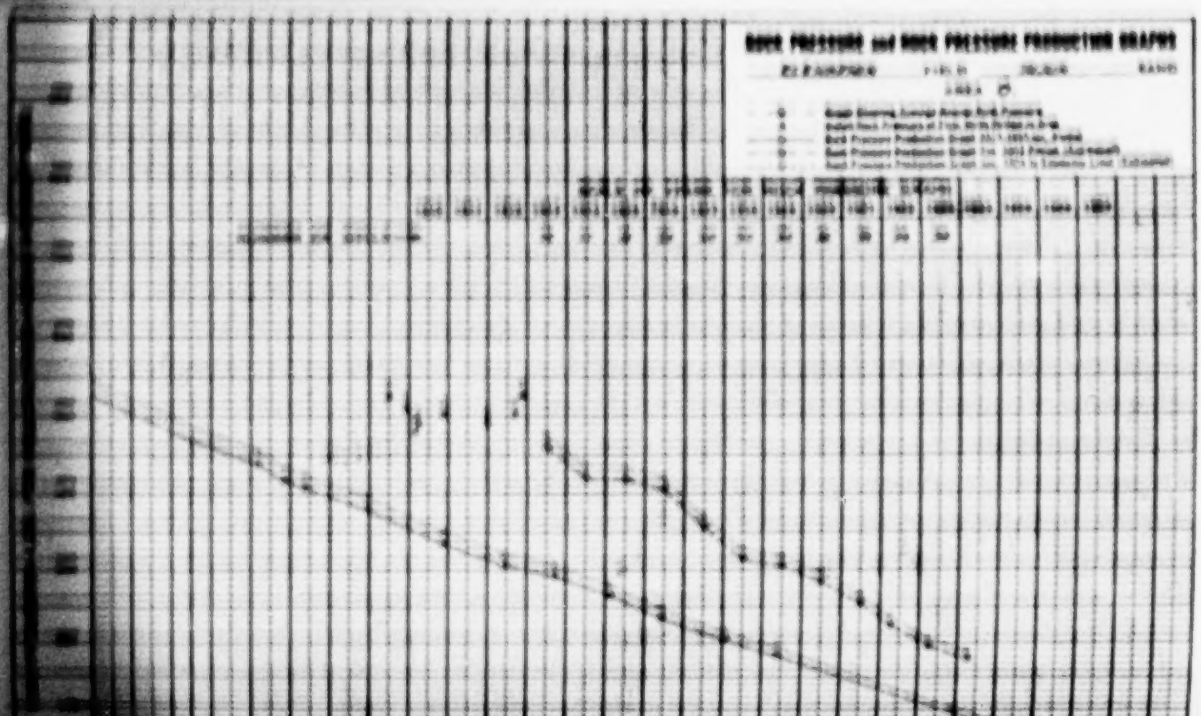

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEARFIELD FIELD CROSBY SAND
AREA A.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 Inc. Period
Rock Pressure Production Graph Pre. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF WEEKS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

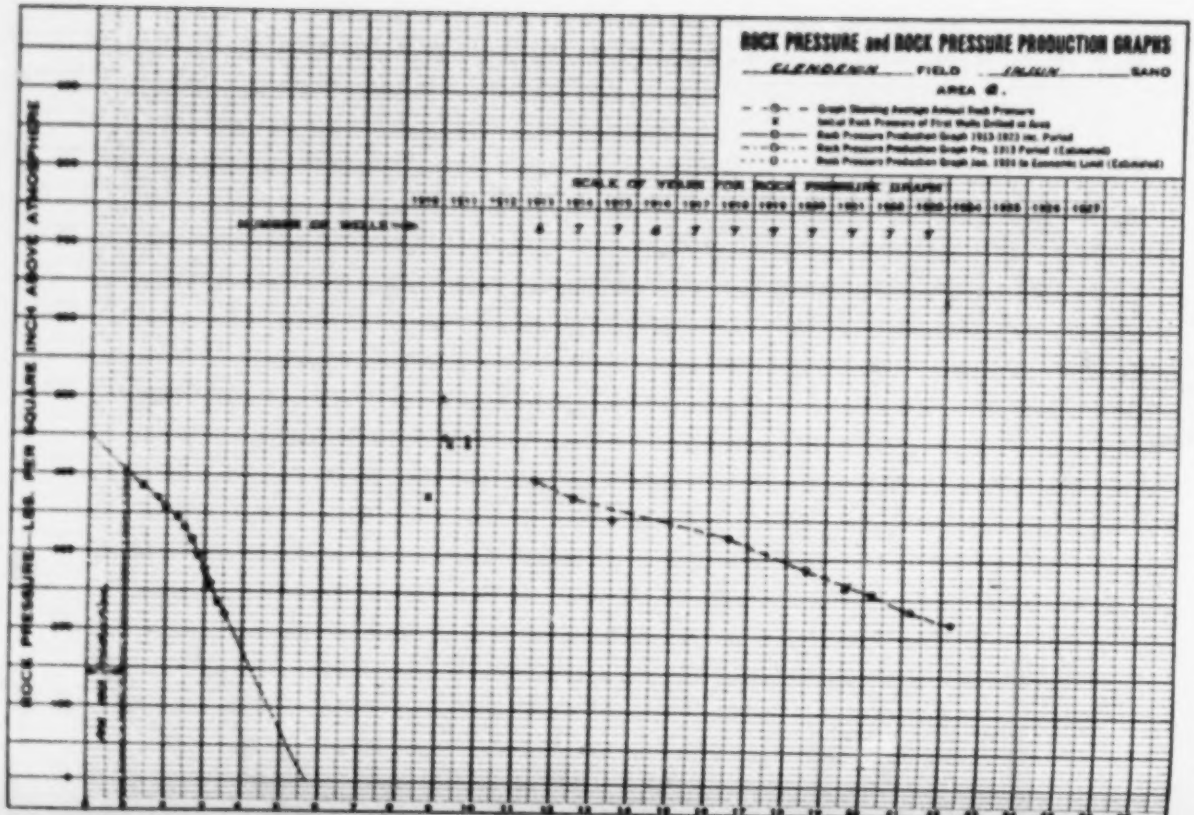

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENDENNING FIELD INLOW SAND
AREA 4.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph Pro. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF VALUES FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

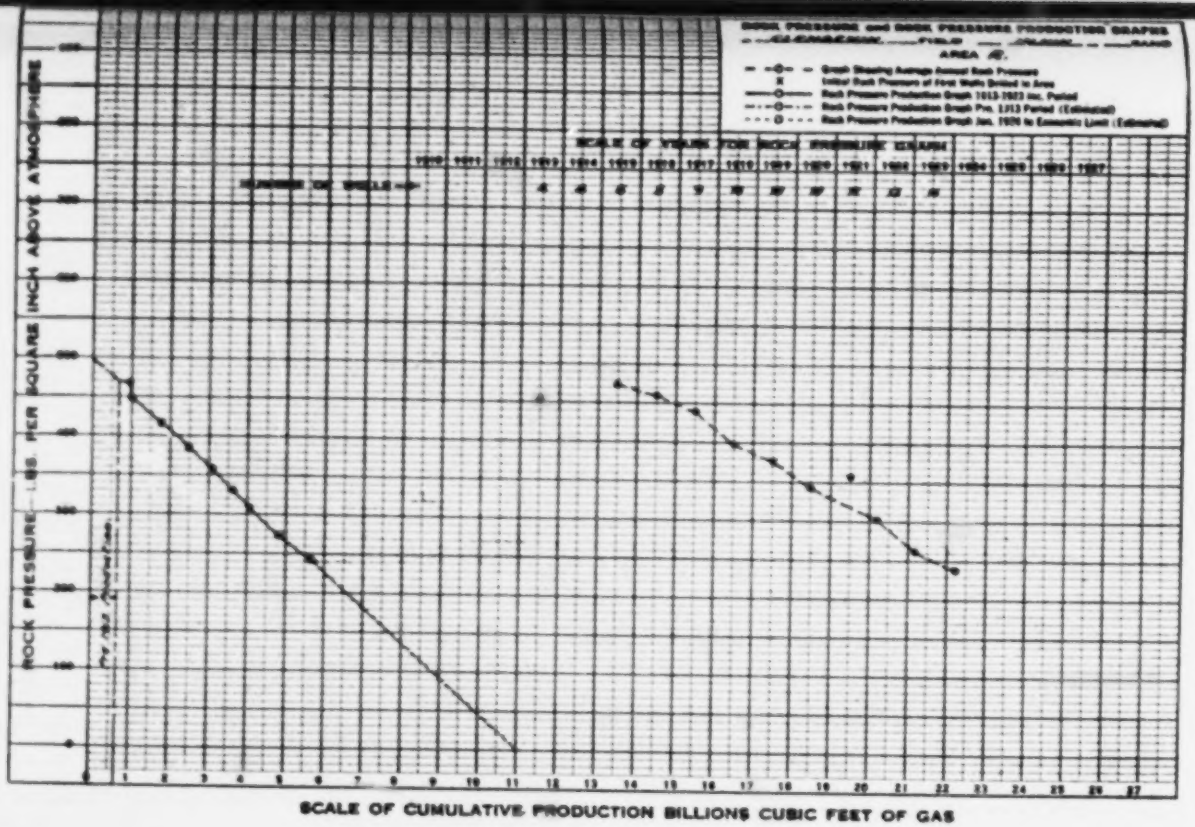

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA IV.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

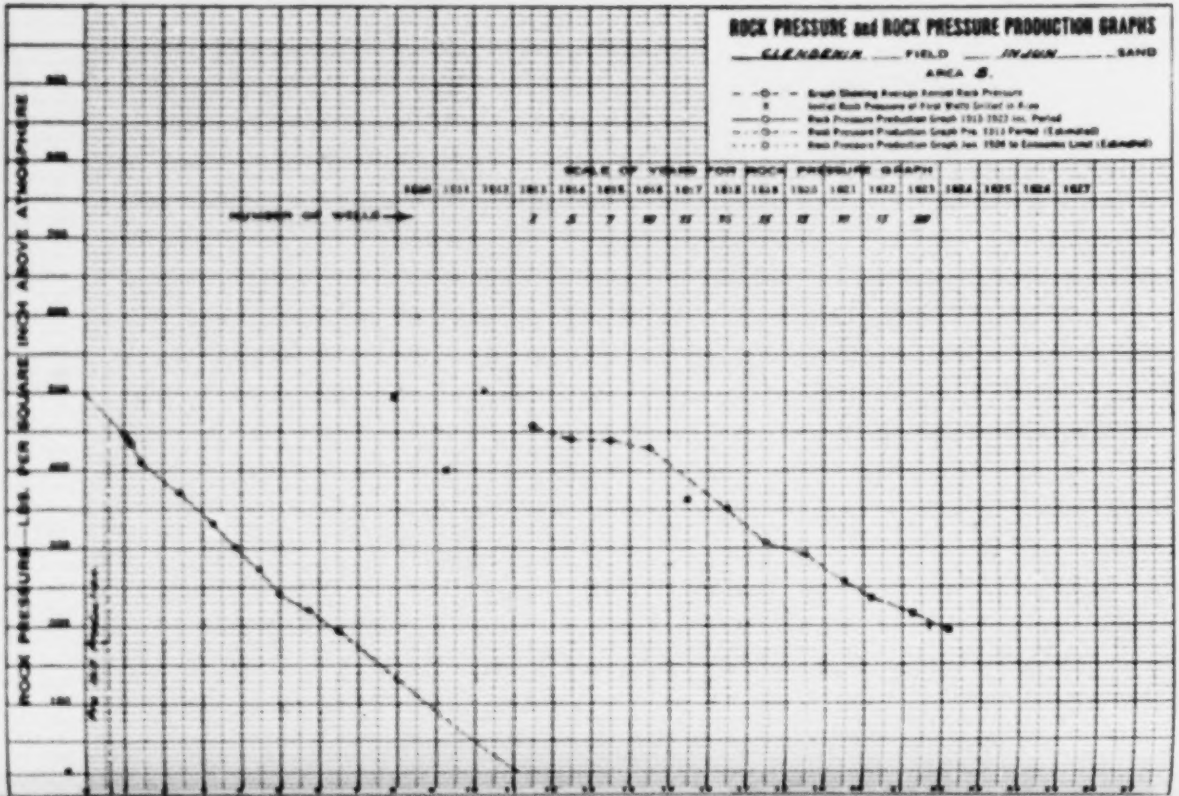

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD INJUN SAND
AREA M.M.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE

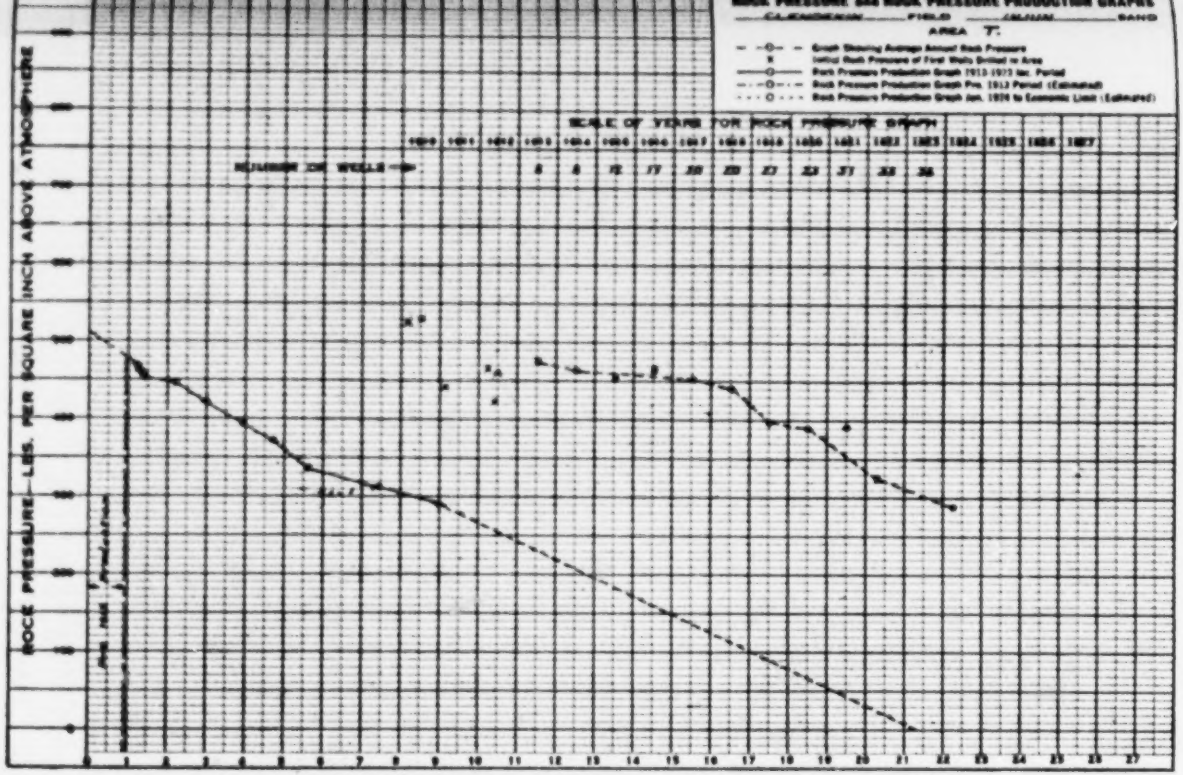

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEARFIELD ... FIELD ... RUSH ... SAND
AREA N.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

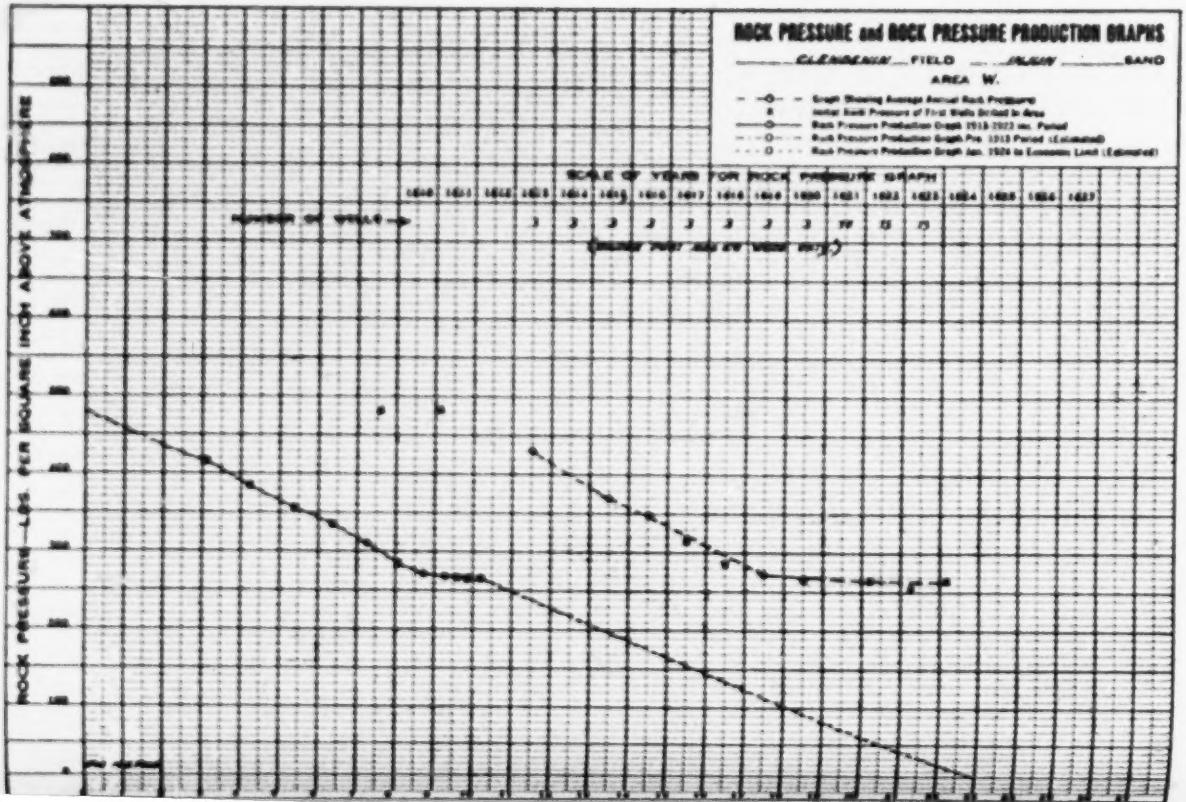



ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
FIELD
SAND
AREA @.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE


ROCK PRESSURE LBS PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
GLENDEVIL FIELD INJUN SAND
AREA B.
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
1 3 7 10 11 11 12 12 11 11 10


ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS
AREA T.


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLENDENIN FIELD PLAIN SAND
AREA W.
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
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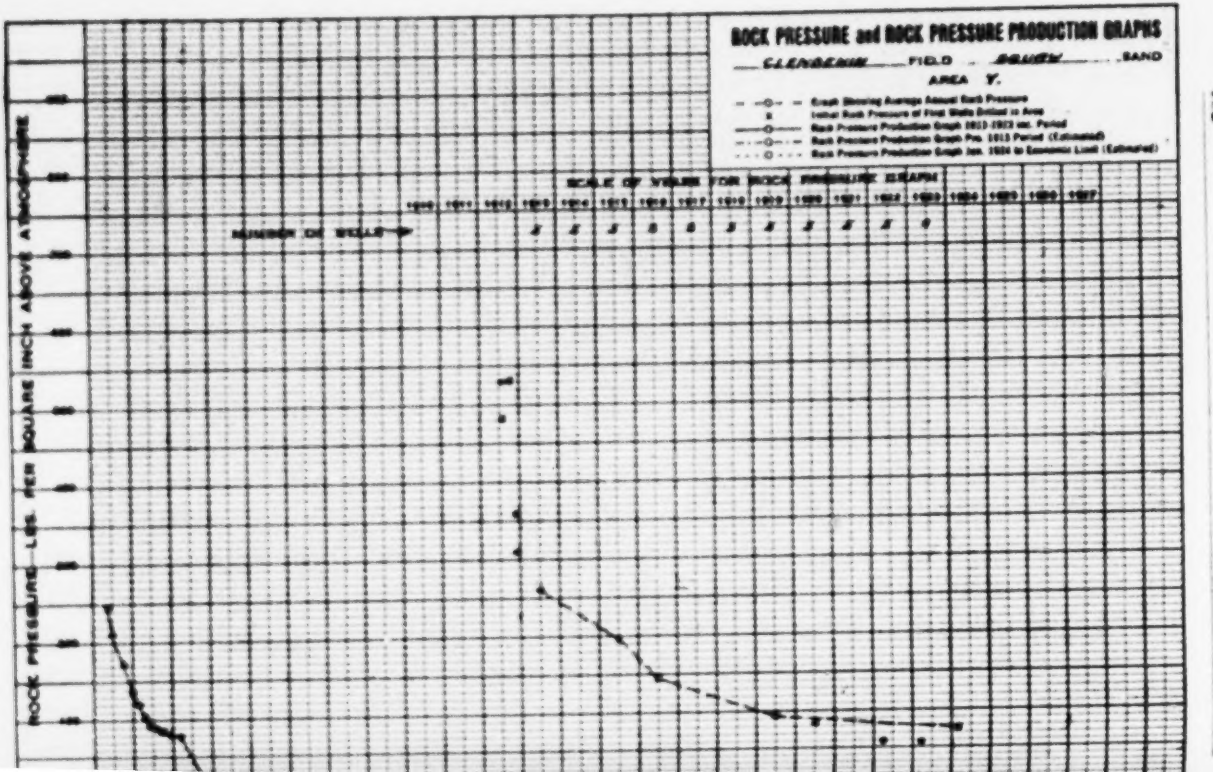
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEARCREEK FIELD SQUISH SAND
AREA Y.
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
NUMBER OF WELLS
SCALE OF VALUES FOR ROCK PRESSURE GRAPH
1908 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
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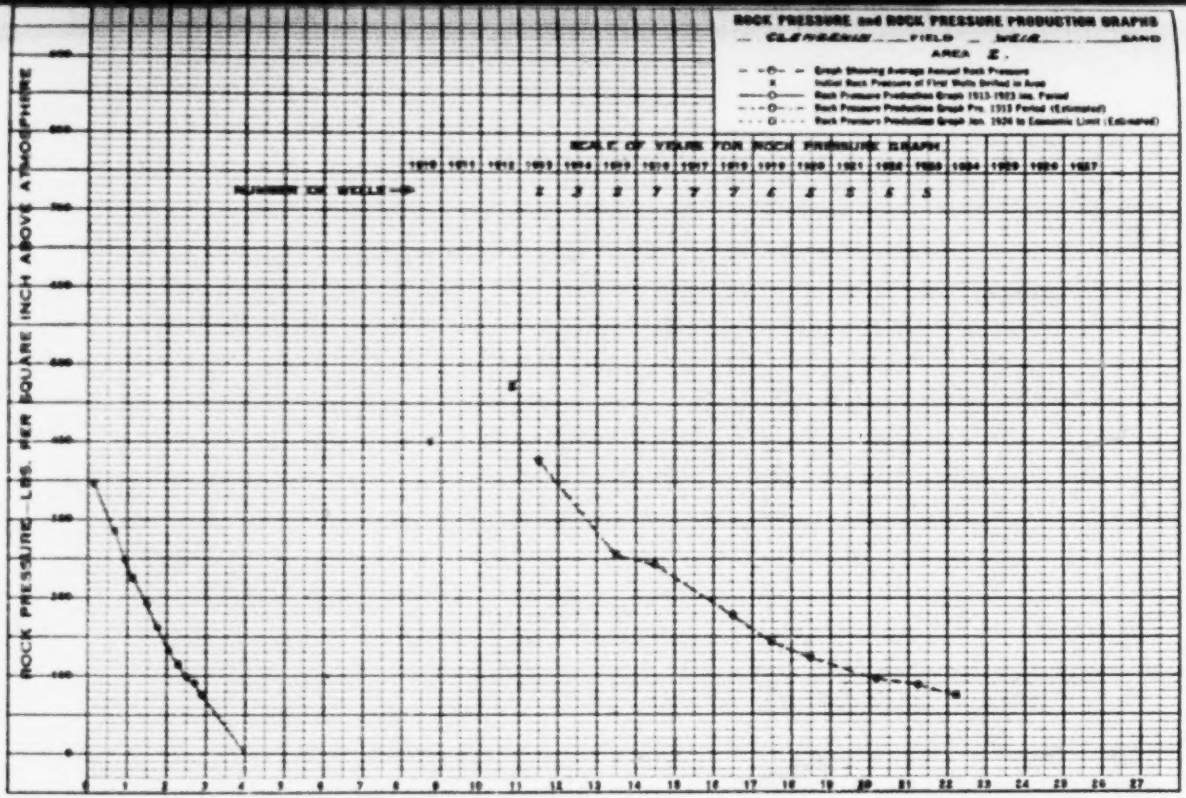
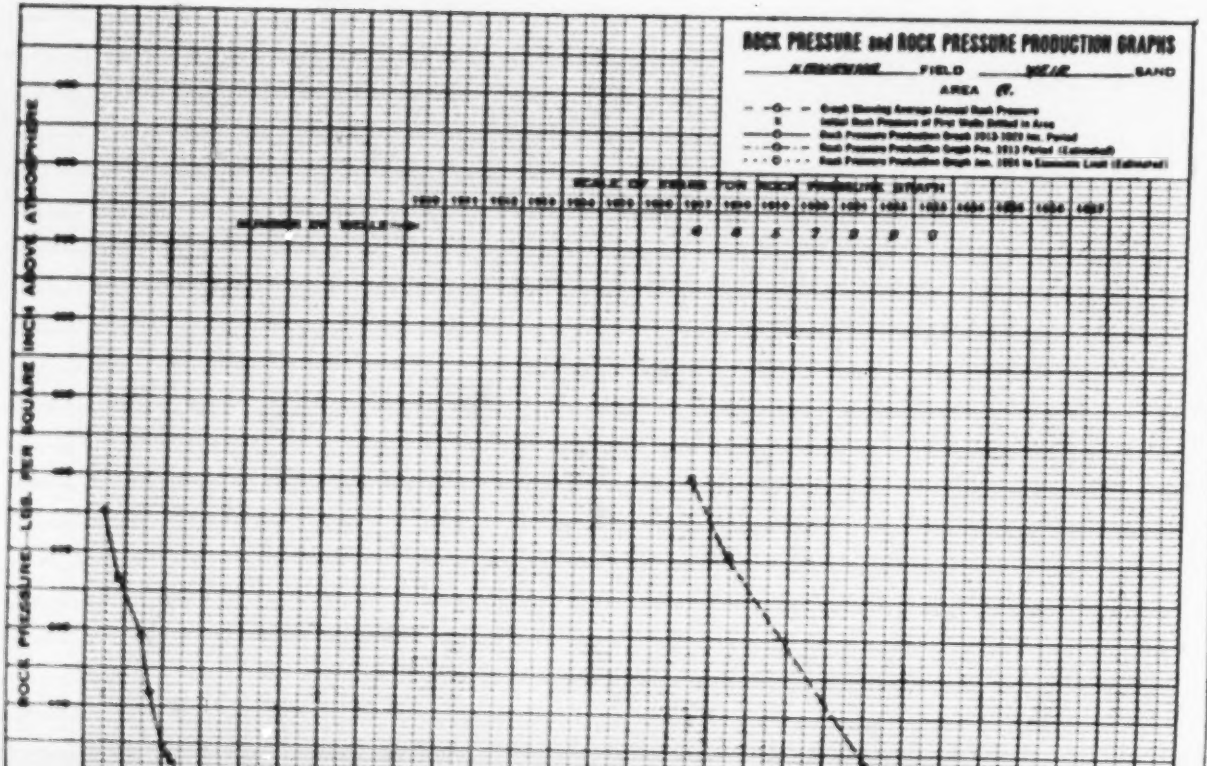
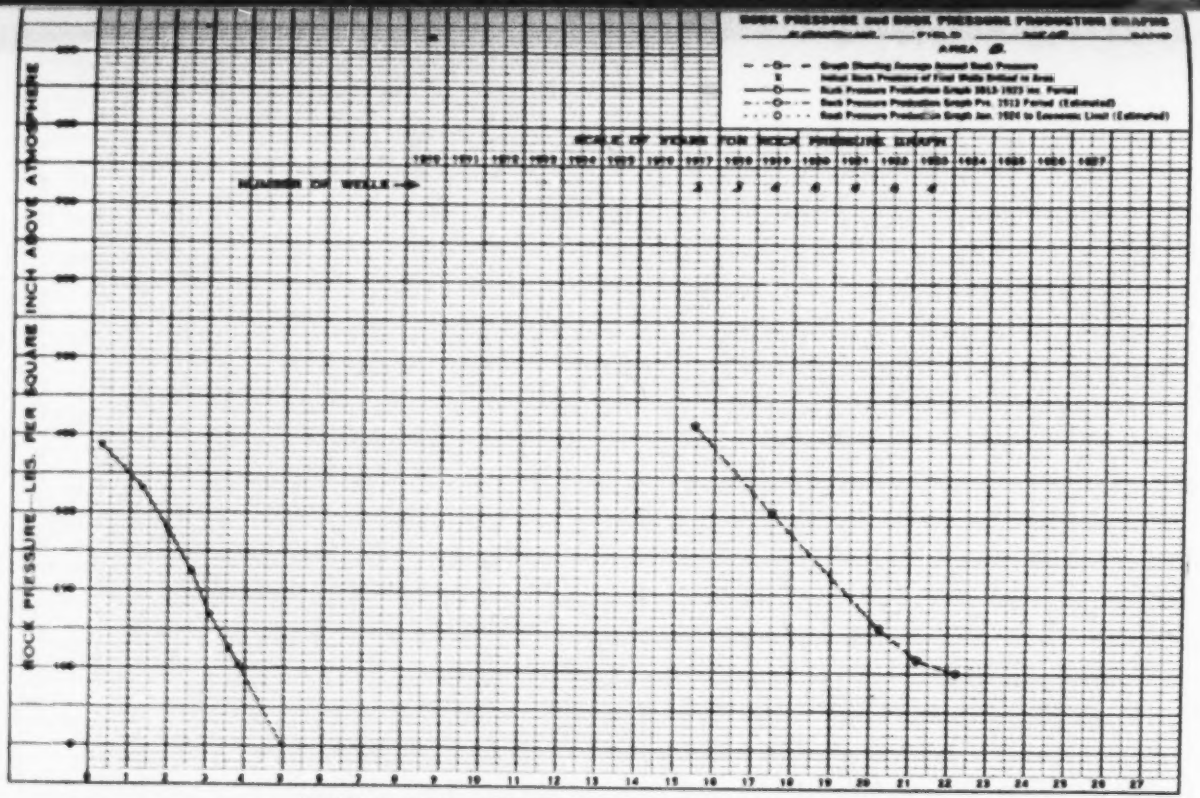
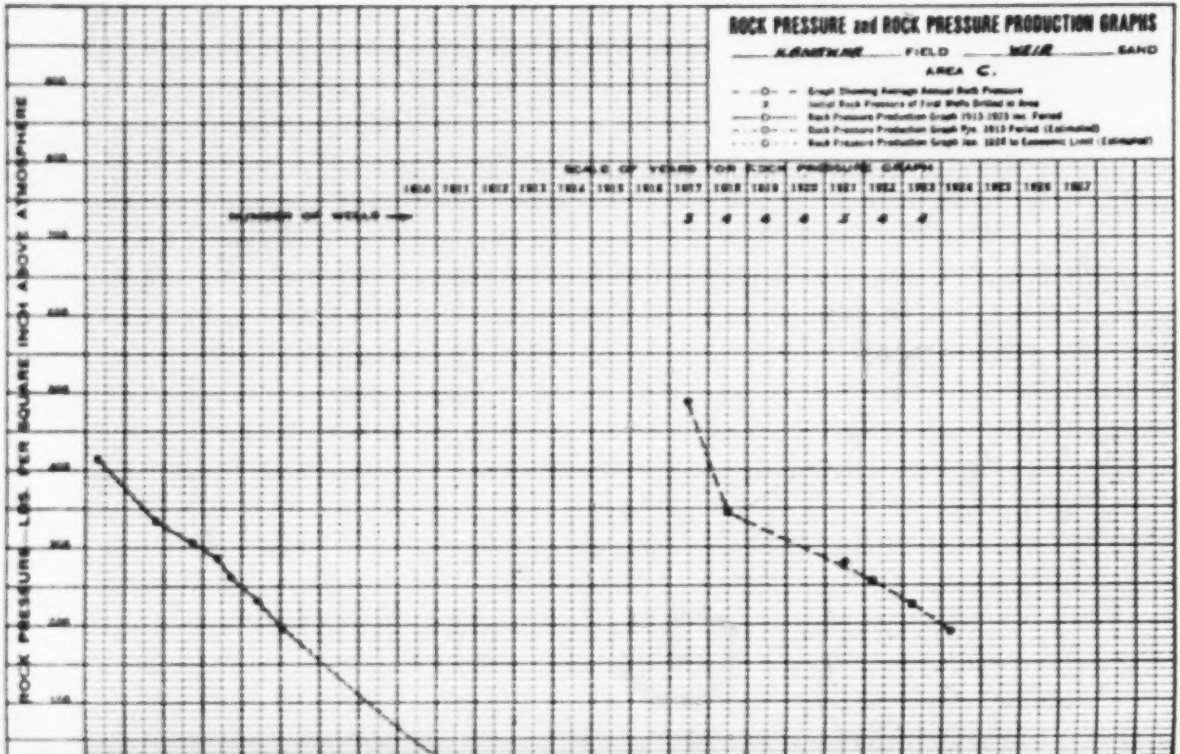

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
CLEARFIELD FIELD WEIR SAND
AREA E.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 inc. Period
Rock Pressure Production Graph Pro. 1913 Period (Estimated)
Rock Pressure Production Graph Jan. 1924 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
1 3 2 7 7 7 6 5 5 5 5
E
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

868
103

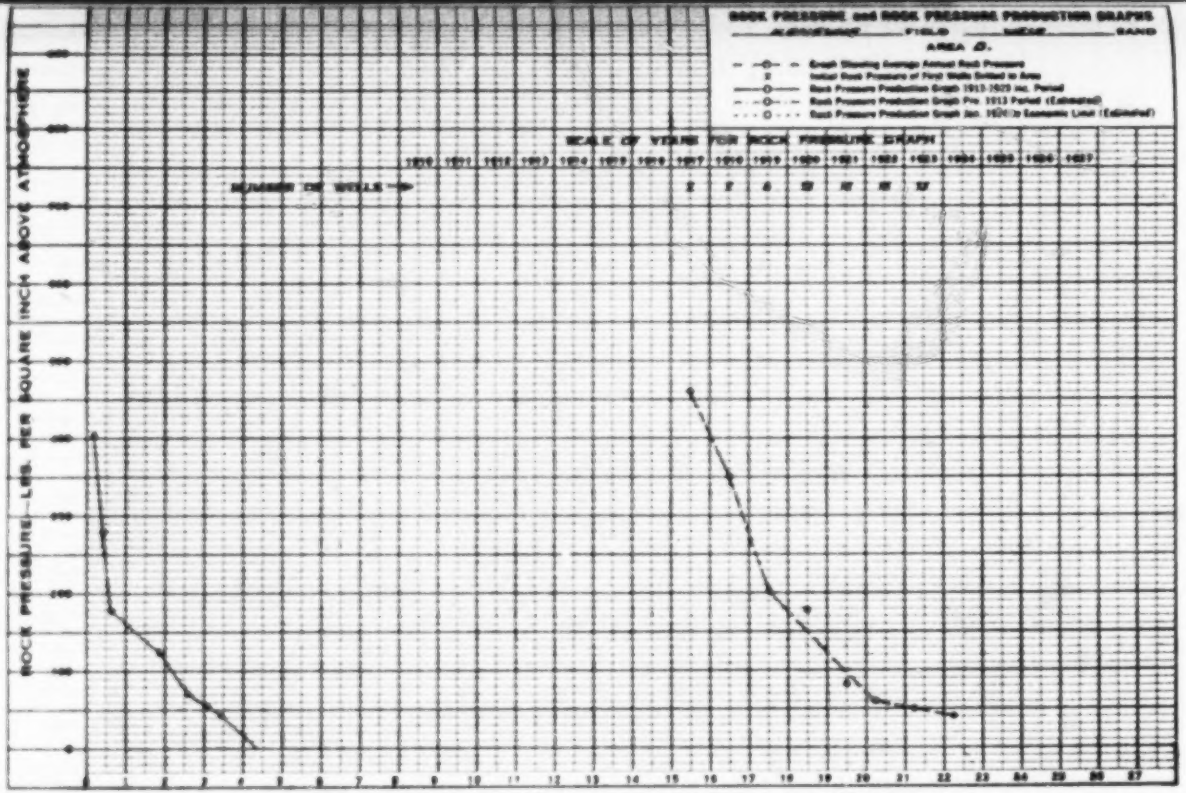

ROCK PRESSURE AND ROCK PRESSURE PRODUCTION GRAPHS
FIELD
SAND
AREA
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

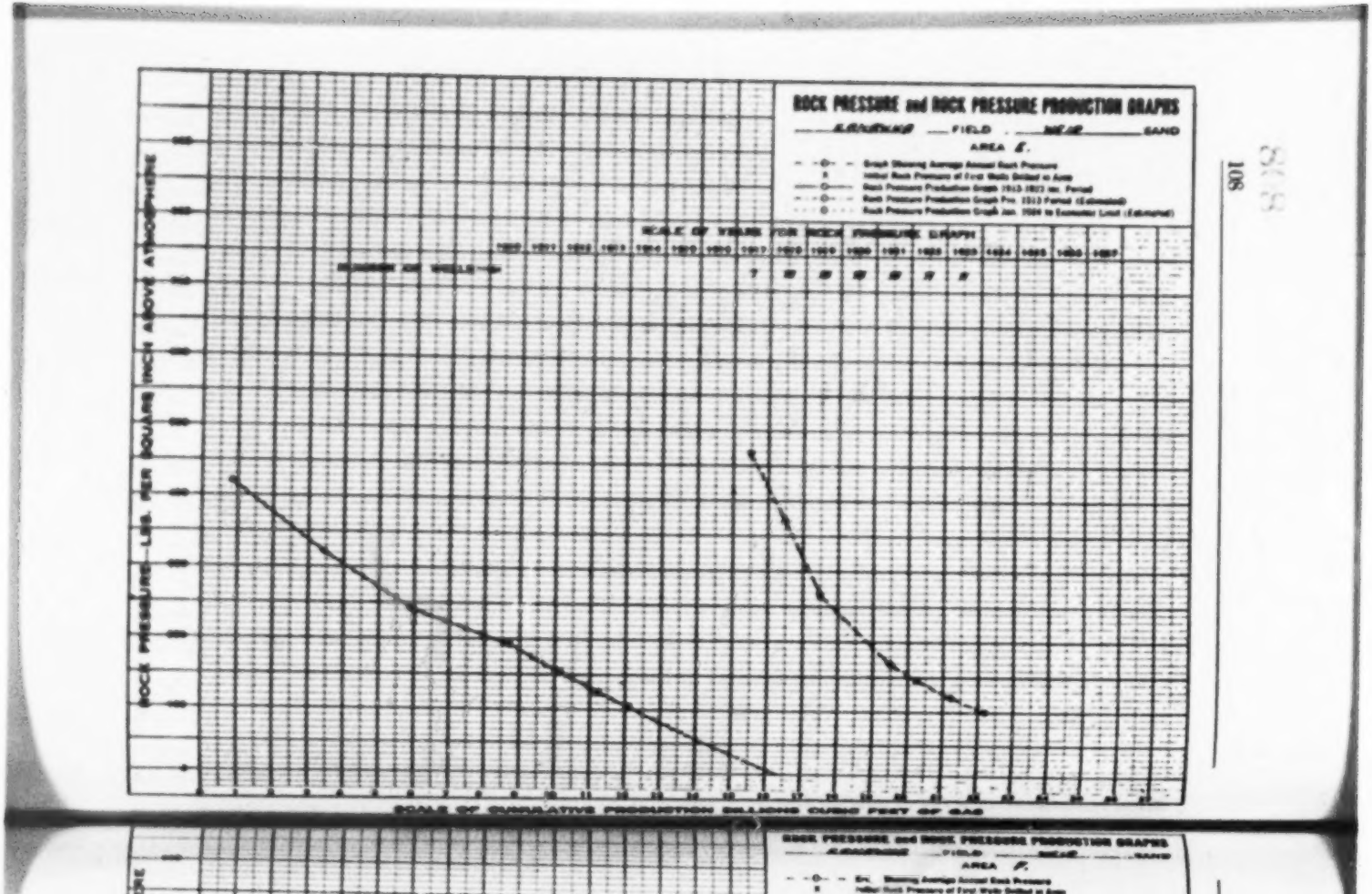
104

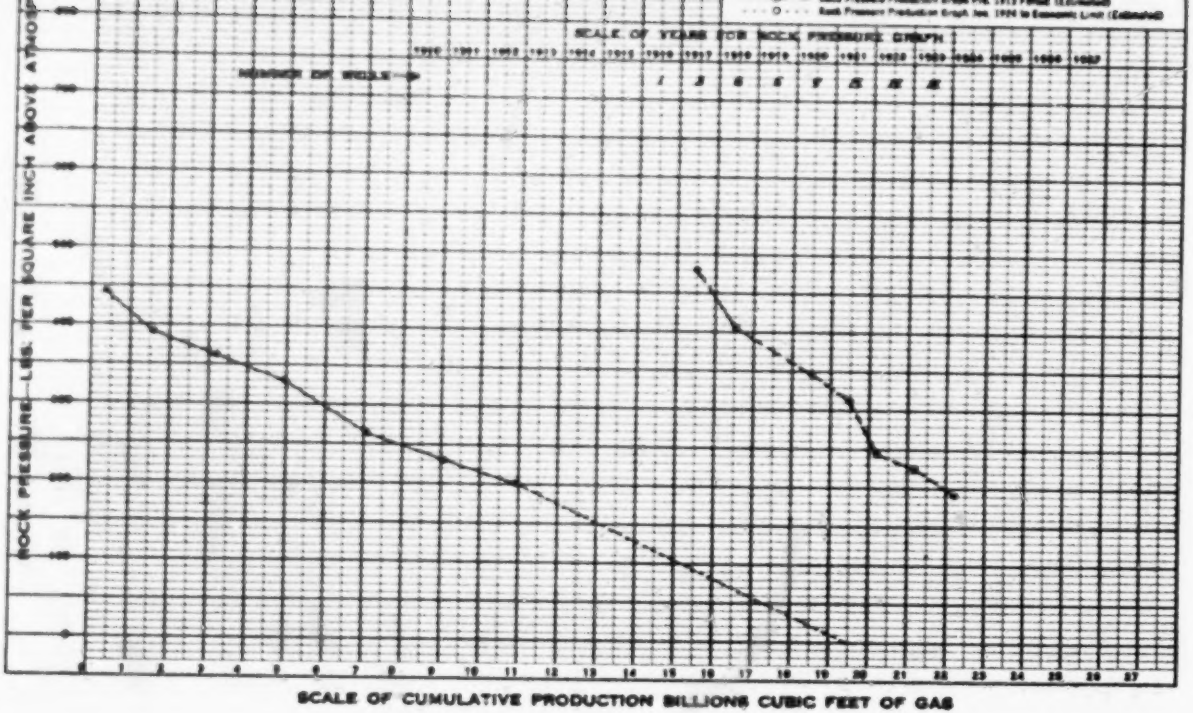

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA B
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
KLONDIKE FIELD WEIR SAND
AREA C.
Graph Showing Average Annual Rock Pressure
Initial Rock Pressure of First Wells Drilled in Area
Rock Pressure Production Graph 1913-1923 Inc. Period
Rock Pressure Production Graph Rpt. 1913 Period (Estimated)
Rock Pressure Production Graph Rpt. 1928 to Economic Limit (Estimated)
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927
Number of Wells
3 4 4 4 3 4 4
ROCK PRESSURE — LBS. PER SQUARE INCH ABOVE ATMOSPHERE
Number of Years

108


ROCK PRESSURE AND ROCK PRESSURE PRODUCTION GRAPHS
AREA D.
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

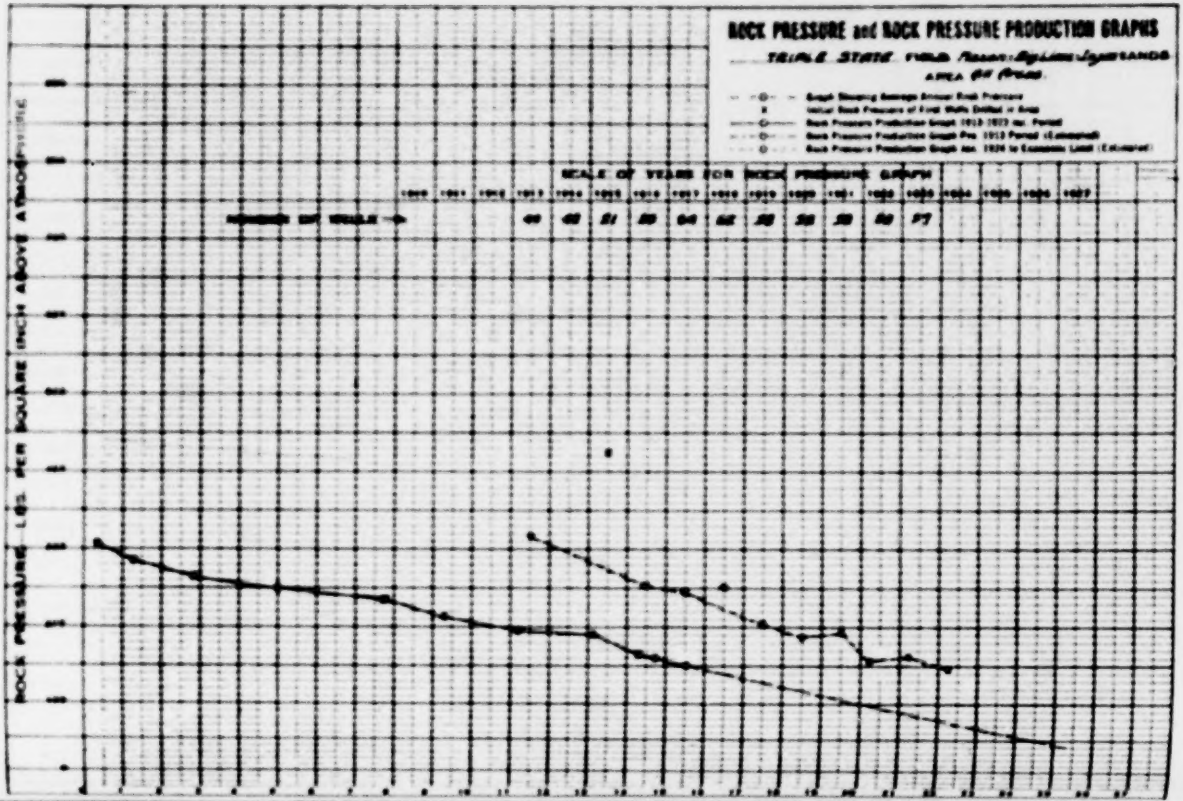

ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA E.
ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF CUMULATIVE PRODUCTION GRAPH
ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
AREA F.


ROCK PRESSURE—LBS. PER SQUARE INCH ABOVE ATMOSPHERE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
NUMBER OF WELLS
SCALE OF CUMULATIVE PRODUCTION BILLIONS CUBIC FEET OF GAS

109

6028

6028


ROCK PRESSURE and ROCK PRESSURE PRODUCTION GRAPHS
TRIPLE STATE
SCALE OF YEARS FOR ROCK PRESSURE GRAPH
ROCK PRESSURE - LBS. PER SQUARE INCH ABOVE ATMOSPHERE

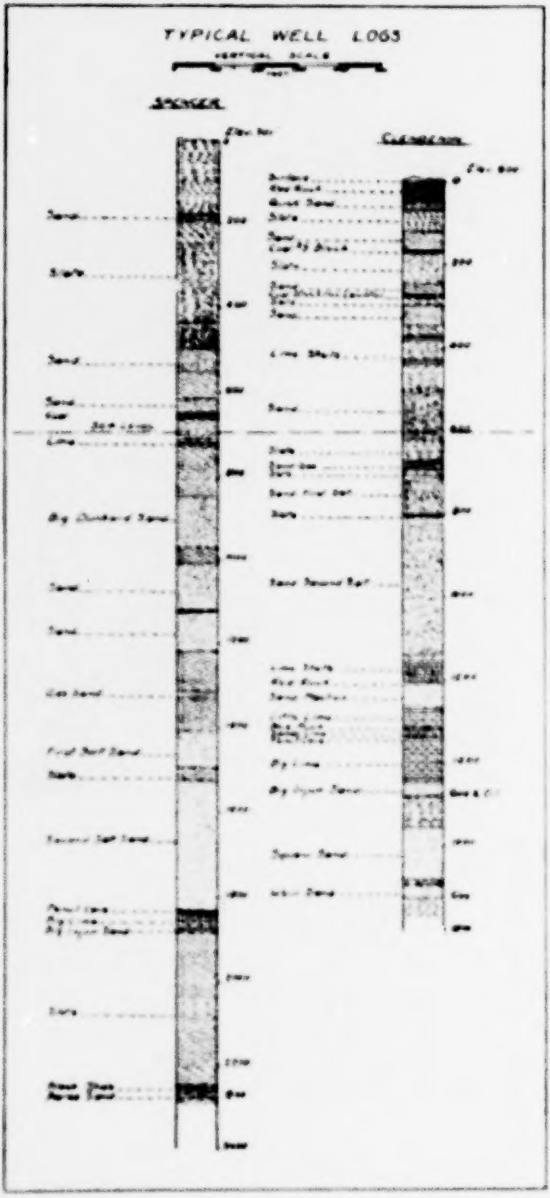
SECTION IV

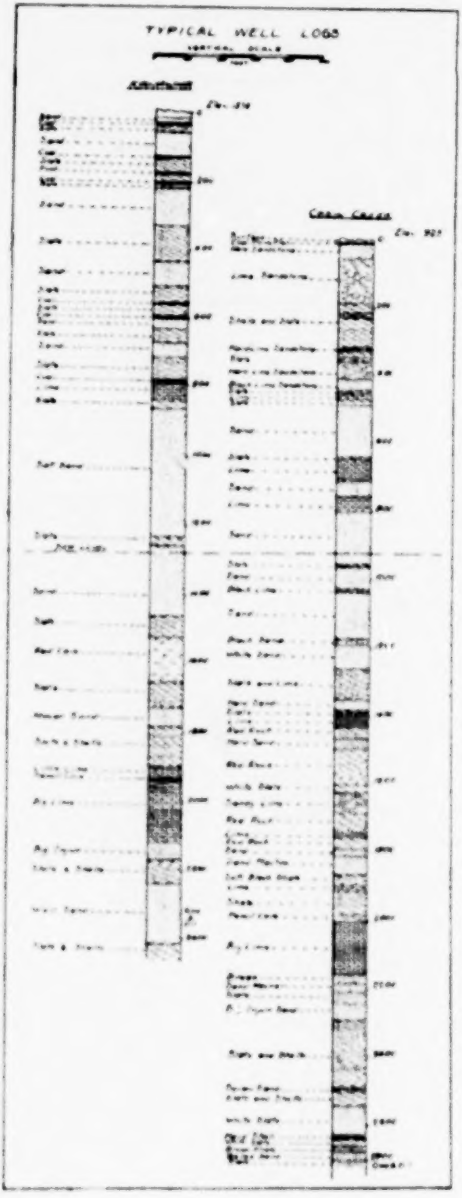
GEOLOGICAL DATA

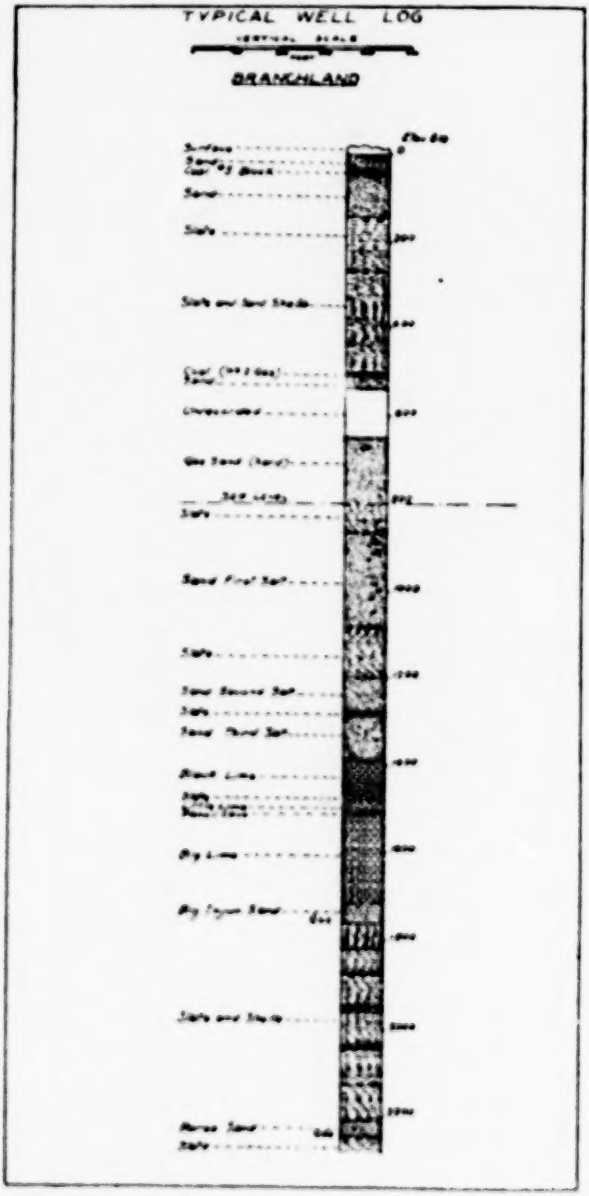
Geological Outline Map

(Showing Pools, Sand Distribution and Structural Areas)

Typical Well Logs.


TYPICAL WELL LOGS


TYPICAL WELL LOGS


TYPICAL WELL LOG
BRANCHLAND

SECTION V

DETAILED DATA

Description of Areas: Probable, Possible and Unfavorable Gas Territory

Table No. 4. Rock Pressure—Production Well Data
(Arranged by Fields)

DESCRIPTION OF AREAS CLASSED AS PROBABLE, POSSIBLE AND UNFAVORABLE

The geologic map shows a division of territory into (a) proven, (b) probable, (c) possible, and (d) unfavorable areas. Each class of territory is further subdivided into unit areas each of which is numbered for the purpose of reference. For example, on sheet number two of the geologic map, the probable areas are shown in blue and are numbered 204, 205, etc. In like manner the possible areas, shown in yellow, are numbered 214, 215, etc.

The following description of each sub-area gives the basis for the classification made, the method of estimating probable gas reserves and recommendations concerning the particular areas described. The acreage held under lease by the company has been determined for each unit area by scaling the farm maps covering the same area and the result is expressed in square mile units.

PROBABLE GAS TERRITORY

MAP SHEET NO. 2

(All company acreage held by the United Fuel Gas Co.)

AREA 204

Farm Maps 9 and 19 — Acreage held 1.1 square miles

About one-half of the area is considered probable for gas production in the Injun and Berea Sands, the other half probable for gas in the Berea Sand only.

Four foreign wells have been completed in this area and are productive from the Injun Sand. The initial open flow of these wells ranged from 20 M to 700 M.

The area is much less attractive than the proven portion of the Spencer Pool for the reason that edge wells of the proven area "L" had small initial open flows.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
5.9	635	1.1	.25	1.0 billion

The above production factor is the average found for the Berea Sand of the Spencer Pool. The rock pressure is the average initial rock pressure found for the adjoining proven area "L." The factor of 25% is applied to properly compensate for the fact that the area appears much less attractive than the productive area with which it is compared.

AREA 205

Farm Map No. 18 Acreage held 1.2 square miles

All of this area is considered probable for gas production in the Berea Sand.

There are no producing wells within this area and there are three dry holes at its edges, toward the northwest, these show that the Berea Sand has either pinched out or tightened.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
5.9	811	1.2	.25	1.4 billion

The above production factor is the average found for the Berea Sand of the Spencer Pool. The rock pressure is the average initial rock pressure of the proven areas "H," "J," and "K."

A factor of 25% is used partly to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve, and partly to measure the probability that the area will prove less productive than the area with which it is compared.

AREA 207

Farm Maps No. 18 and No. 19 **Acreage held 1.7 square miles**

This area is considered probable for oil or gas production from the Injun Sand.

There are two foreign gas wells, five foreign oil wells, one foreign oil and gas well in the Injun Sand and three dry holes.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
9.0	615	1.7	.25	2.4 billion

The above production factor is the average found for the Injun Sand in proven area "M" Spencer Pool. The rock pressure is the average initial rock pressure of proven area "M."

A factor of 25% is used partly to compensate for the difference in rock pressure that will be found in the area when it is developed and that used in estimating its reserve, and partly to measure the possibility that wells drilled will be small oil wells or dry holes.

AREA 208

Farm Maps No. 17, No. 18, No. 27, No. 28

Acreage held 9.5 square miles

This area is classed as probable for gas in the Salt Sand, also to a lesser degree for the Berea Sand.

Some of this area has been tested and gas production from the Salt Sand has been obtained.

There are three gas wells and five oil wells producing from the Salt Sand. The initial open flows of the gas wells ranged from 500 M to 3,500 M. Within the area there is one abandoned gas well, one abandoned oil well and six dry holes.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
5.2	610	9.5	.25	7.5 billion

(This includes the reserves of wells No. 993 and 319)

The above production factor of 5.2 million feet is that of the Salt Sand in the Spencer Pool. The rock pressure is the average initial rock pressure of proven area "C-C."

A factor of 25% is used partly to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve; and partly to measure the probability that a considerable portion of the area will prove unproductive.

The drilling of this area can be carried on from the outer edges of the proven areas.

AREA 209

Farm Map No. 29 Acreage held 0.2 square miles

This acreage lies between dry hole No. 346 and a small gas well ¾ mile southeast. Wells No. 282 and No. 296 are small wells. Five foreign wells have been drilled within the area. It is probable that a small well would result from drilling.

Drilling is not recommended and no reserves are included for the area.

AREA 210

Farm Maps No. 28, No. 37, and No. 38

Acreage held 1.4 square miles

This acreage is considered probable for gas production in the Injun Sand.

There are fourteen foreign wells producing from the Injun, Lime or Salt Sands. The initial daily open flow of these wells ranged from 200 M to 1,200 M. Four small oil wells are also producing.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Million Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	505	1.4	.25	1.3 billion

The above production factor of 7.1 million feet is the average found for the Injun Sand in the Clendenin Pool. The rock pressure is the average initial rock pressure of proven areas "C" and "D." A factor of 25% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

AREA 211

Farm Maps No. 37 and No. 38. Acreage held 5.7 square miles

This area is considered probable for gas production from the Injun Sand. The majority of the edge wells of the proven areas "B," "C," and "C-C" have high initial open flows; however the outer edge of the area is well defined by dry holes. Within the area there is one producing oil and gas well and one abandoned oil well.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	507	5.7	.75	15.4 billion

The above production factor of 7.1 million feet is the average production factor of the Injun Sand in the Clendenin Pool.

The rock pressure is the average initial rock pressure of the proven areas "B," "C," and "C-C."

A factor of 75% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

Drilling can best be carried on by working outward from the proven areas.

AREA 212

Farm Map No. 38 Acreage held 5.5 square miles

This area is considered probable for oil production as there are already eleven small oil wells and but one dry hole.

The company holds the gas rights in this acreage but the oil rights on only 2.2 square miles.

No gas reserve has been included for this area.

AREA 213

Farm Maps No. 29 and No. 39 Acreage held 17.3 square miles

All of this area is considered probable for gas production in the Injun Sand. The edge wells of the adjacent proven areas have on the average been large producers.

A very small portion of this area has been drilled.

There are five foreign gas wells and one company gas well producing from the Injun Sand.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	510	17.3	.65	40.7 billion

(This includes reserve of well No. 402)

The above production factor of 7.1 million feet is the average production factor of the Injun Sand in the Clendenin Pool. The rock pressure is the average initial rock pressure of the adjoining proven areas.

A factor of 65% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

Drilling of this area can be best carried on by working outward from the edges of the proven areas.

MAP SHEET NO. 3

AREA 304

Farm Map No. 47 — Acreage held 1.5 square miles

This area is classed as probable for gas in the Injun Sand.

The southwestern portion of this area has been drilled and is productive of gas from the Injun Sand. Structurally the area is near the crest of a plunging anticline and is practically surrounded by a dry area.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	500	1.5	.75	4.0 billion

(Includes reserves of wells No. 345, No. 286 and No. 646)

The above production factor of 7.1 million feet is the average found for the Injun Sand in the Clendenin Pool. The rock pressure used, 500 lbs., is the initial rock pressure of the area. A factor of 75% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

AREA 307

Farm Maps No. 38, No. 48 and No. 49

Acreage held 22 square miles

All of this area is considered probable for gas in the Injun Sand and in some parts in the Weir Sand.

For the most part, this acreage is surrounded by proven areas. The area to the southeast, however, is considered dry although successful results have attended drilling in the southeast part of area No. 307.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	485	22.0	.75	56.8 billion

(This includes reserves of wells No. 461, No. 404, No. 662, No. 900, No. 494, No. 609, No. 644, No. 1010, No. 1276, No. 1293, No. 1332, No. 1337 and No. 1350.)

The above production factor of 7.1 million feet is the average found for the Injun Sand in the Clendenin Pool. The rock pressure used, 485 lbs. is the average initial rock pressure of the area.

A factor of 75% is used to compensate for the difference in rock pressure that will be found in this area when it is developed and that used in estimating its reserve.

AREA 316

Farm Maps No. 47 and No. 48 Acreage held 12.7 square miles

This area, situated on the flank of the Warfield Anticline, is considered probable for gas production in the Injun, Squaw and Weir Sands but the Injun is by far the most important. It is on the edge of an oil pool and has one proven area of gas near its center and another at one end.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	462	12.7	.75	31.2 billion

(This includes reserves of wells No. 777, No. 778, No. 661 and No. 752)

The above production factor of 7.1 million feet is the production factor found for the Injun Sand in the Clendenin Field.

The rock pressure used, 462 lbs., is the average initial rock pressure of wells drilled in the area and of neighboring wells.

Since wells drilled in the area have proven smaller than those in the adjoining proven area, a factor of 75% has been used.

AREA 322

Farm Maps No. 47, No. 48 and No. 57

Acreage held 8.1 square miles

This area, situated near the apex of the Warfield Anticline, is considered probable for gas production from the Big Lime, Keener and Injun Sands. The Company has drilled four wells within the area and these as well as foreign wells are productive from these three sands.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
7.1	340	8.1	75	14.7 billion

(This includes the reserves of wells No. 554, No. 1099, No. 1117 and No. 1314)

As there is no company proven area near, it is found necessary to use the average production factor for the Injun Sand in the Clendenin Pool. The rock pressure used, 340 lbs., is the average initial rock pressure of the area.

A factor of 75% has been used partly to compensate for the depletion of this area by foreign wells.

AREA 325

Farm Maps No. 57 and No. 58

Acreage held by Cabin Creek Gas Co.—2.4 sq. mi.
Acreage held by United Fuel Gas Co.—22.2 sq. mi.

This area, located on the east flank of the Warfield Anticline is considered probable for gas production from the Weir Sand, which is thick in this area.

This area completely surrounds the large proven area No. 326, and only a small portion of area No. 325 is bounded by dry territory.

A few wells have been drilled within the area and are productive.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet		Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
U. F. G.	19.0	400	22.2	.50	84.4 billion
Cabin Creek	19.0	400	2.4	.25	4.6 billion

(This includes reserves of wells No. 1137, 1090, 1091, 907, 1116, 1018, 974, 1277, 1298 and CC 46)

The above production factor is the factor obtained for the Weir Sand in the proven areas of this locality. The rock pressure used, 400 lbs., is the approximate average initial rock pressure of this area.

Since the Weir Sand becomes thinner at the outer boundaries, and the fact that the area surrounds closely drilled acreage, a 50% factor has been used for the United Fuel Gas Co. acreage. Due to the fact that one dry hole has been drilled close to the Cabin Creek Gas Company acreage a factor of 25% has been used.

In certain sections of this area drilling should be undertaken promptly, as the foreign wells now producing will rapidly deplete the reserve of those portions.

AREA 330

Farm Maps No. 57 and No. 67 Acreage held 5.4 square miles

This area, situated on the crest of the Warfield Anticline, is fairly well tested and is considered probable for gas production in the Big Lime. The life of such wells will be short however. No production of consequence from other sands is likely.

Several foreign wells are productive within the area. There is a dry area to the northeast and northwest.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.0	330	5.4	.75	4.0 billion

The above production factor of 3.0 is based on a comparison between the Injun production with that of the Big Lime. The average initial rock pressure is about 330 lbs.

A factor of 75% has been used to compensate for the difference in rock pressure that will be found when it is developed and that used in estimating its reserve.

AREA 332

Farm Maps No. 58 and No. 68 Acreage held 4.1 square miles

This area is considered probable for gas production in the Berea and Weir Sands, the Berea being the more important.

No wells have been drilled within this area.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	558	4.1	1.0	9.2 billion

The above production factor of 4.0 is the production factor as found in the Berea Sand of Sheet No. 4. The rock pressure used, 558 lbs., is the initial rock pressure as found in the Berea Pools on Sheet No. 4.

This estimate seems rather low, and no reduction is made because some production may be obtained from the Weir Sand. One or two test wells should be drilled.

AREA 335

Farm Maps No. 58 and No. 68 Acreage held 1.8 square miles

This area is considered probable for gas production in the Berea Sand, as foreign wells obtaining good production have been drilled throughout the area.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	540	1.8	1.0	3.9 billion

(This includes reserves of well No. 812)

The above production factor is that of the Berea Sand. The rock pressure used, 540 lbs. is the average initial rock pressure for this area. No discount factor is applied.

AREA 339

Farm Maps No. 58 and No. 68 Acreage held 5.1 square miles

This area, lying on the flanks and crest of the Hansford Anticline, a minor fold of the Warfield Anticline, is considered probable for gas production from the Weir Sand. Some gas may be produced from the Berea Sand.

The area is bounded by an oil pool on one side.

Two company wells have been drilled within the area, the initial production averaging about 400 M cubic feet.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
19.0	500	5.1	.50	24.2 billion

(This includes the reserves of wells No. 1092 and No. 295)

The above production factor of 19.0 million feet is that found for the Weir Sand. The rock pressure used, 500 lbs., is the average initial rock pressure of the area.

Since the initial open flow of the two drilled wells is smaller than those of the area from which the factor is derived, and the fact that an oil pool is near, a factor of 50% has been used.

MAP SHEET NO. 4

AREA 402

Farm Map No. 44 Acreage held by United Fuel Gas Co. 1 square mile

This area is classed as probable for gas in the Berea Sand.

The area lies near the crest of a small plunging anticline and is near producing wells.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	546	1.0	1.0	2.2 billion

The production factor used is that for the Berea Sand.

AREA 403

Farm Map No. 45 Acreage held 1 square mile

This area is classed as probable for gas in the Berea Sand.

It is located on the flanks of a plunging anticline, is near producing wells and is practically proven.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	558	1.0	.50	1.1 billion

(Includes the reserves of well No. 593)

The above production factor is determined by the nearest proven Berea Pool. The initial rock pressure is also determined by this pool. The 50% factor is used because foreign wells are depleting the area to some extent.

AREA 404

Farm Map No. 55

This area is classed as probable for gas in the Salt, Injun and Berea Sands.

The company does not hold any acreage in this area.

The area lies on the top and flank of a small dome and has been producing gas for the past ten years. Most of the production comes from the Salt and Injun Sands although a little production has come from the Berea. The area has been practically drilled up except for some offsets to producing wells.

AREA 405

Farm Maps Nos. 45, 54 and 55

Acreage held by United Fuel Gas Co.—1.1 square miles

This area is classed as probable for gas in the Berea Sand.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	570	1.1	1.0	2.5 billion

The production factor is that for adjacent proven areas of the Berea Sand and the rock pressure is the average initial rock pressure of the surrounding area.

AREA 406

Farm Map No. 55

This area is classed as probable for oil in the Berea Sand.

The company does not hold any acreage in this area.

The area lies in the bottom and on the flank of a basin, north and east of the Griffithsville oil pool. All of the wells drilled in this neighborhood produce from one to eight barrels of oil from the Berea and several small wells could be expected in this area.

AREA 408

Farm Maps Nos. 55, 56, 65, 66

Acreage held by United Fuel Gas Co.—51.6 square miles

This area is classed as probable for gas in the Big Lime and Berea Sands.

The area lies on the flanks of the Warfield Anticline and has been well tested. Gas has been found in both the Big Lime and Berea, the latter being by far the more important. The south and east portions of the area have proven more productive in the Big Lime, the northerly and westerly portions productive from the Berea. Most of the company acreage lies in the Berea section of the area.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	509	51.6	75	78.8 billion,

(This includes the reserves of wells Nos. 213, 230, 500, 742, 811, 846, 556 and 1089)

The above production factor is determined by proven areas of the Berea of this section and the rock pressure is the initial rock pressure of the Berea Sand. The factor of 75% is used because the initial open flow of wells drilled in the area is smaller than the initial open flow of wells of the neighboring Berea pools from which the production factor is determined.

AREA 411

Farm Map No. 53 Acreage held by United Fuel Gas Co.

0.1 square miles

Two wells have been drilled in the Big Lime and Berea sands on this acreage. Inasmuch as the wells are not as yet on line, the reserves are classed as probable and they will be useful only when connected to a line.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
4.0	550	0.1	1.0	0.2 billion

(This includes reserves for wells No. 473 and No. 580)

The above production factor is that found for the Berea Sand in the Columbia proven area.

AREA 413

Farm Maps No. 66, 75 Acreage held by United Fuel Gas Co. 1.5 square miles

This area is classed as probable for gas in the Big Lime.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.0	330	1.5	1.0	1.5 billion

(This includes reserves of wells No. 633 and No. 838)

The above production factor is that found for the Big Lime and the rock pressure is that of wells completed in the area.

AREA 415

Farm Maps No. 73 and No. 83

Acreage held by United Fuel Gas Co.—3.3 square miles

This area is classed as probable for gas in the Big Lime.

This area is apparently a continuation of the Triple State Field. It lies near the crest of the Warfield Anticline which in this locality has proven more productive than elsewhere in the territory studied.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.9	330	3.3	1.0	4.2 billion

In this estimate, the Triple State factor of 3.9 has been used and a rock pressure of 330 pounds, which is the rock pressure of the Triple State Field as of 1913.

AREA 419

Farm Map No. 74 and No. 75

Acreage held by United Fuel Gas Co.—2 square miles

This territory is proven by five company wells and several foreign wells for gas in the Big Lime.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.9	223	2.0	1.0	1.7 billion

(This includes reserves of wells No. 326, 367, 643, 707 and 734)

The rock pressure used is the present average rock pressure of the company wells.

MAP SHEET NO. 5

AREAS 501, 502 AND 510

Farm Maps No. 82 and 83

Acreage held by United Fuel Gas Co.—12.2 square miles

This area is classed as probable for gas production in the Salt, Maxon, Big Lime and Injun Sands.

The area is located on the axis of the Warfield Anticline between proven areas of the Triple State Field. The information on drilled wells in the proven areas of the field is meager but it is thought that the Big Lime is broken and crevassed due to the intense folding as dry holes have been drilled near good producing wells.

In the proven and vicinity of the proven areas (maps 82 and 83) there have been 115 gas wells, 33 dry holes drilled, and of the 148 tests made, 22% have proven dry.

Estimated Probable Reserve

Production Factor per lb. Rock Pressure Millions Cubic Feet	Rock Pressure Used	Company Area Sq. Miles	Factor	Probable Reserve
3.9	330	12.2	1.0	15.7 billion

(This includes reserves of well No. 80)

The production of the proven areas has only been calculated from 1913 due to lack of prior information, and our estimate of reserves of probable areas has been based on the past production from 1913—1923 plus the estimated future production of the proven areas.

The rock pressure used is the average rock pressure of the proven areas at the beginning of 1913. The production factor of the field is 3.9 million cubic feet per pound drop per square mile.

POSSIBLE GAS TERRITORY

MAP SHEET NO. 2

AREA 214

Farm Maps No. 40 and No. 50 Acreage held 2.2 square miles

This area is classed as possible for gas production either in the Big Lime or Injun Sands. The area is structurally well located.

One well has been drilled in the area having an initial open flow from the Big Lime of 1,400 M cubic feet, and an initial rock pressure of 540 lbs.

One or two test wells will show whether further development should be carried on.

AREA 215

Farm Maps No. 29 and No. 30 Acreage held—none

This area is well located for gas. The Chestnut Ridge Anticline passes through its center. There have been five gas wells and one oil well drilled within this area but we have very little information regarding them. They are reported productive from the Injun Sand. The sand is reported as having a thickness of 28' in one well and 66' in another. The initial open flow of one well is given as 6,000 M.

This area is worthy of further study.

AREA 216

Map Sheets No. 1 and No. 2

Farm Maps No. 17 and No. 27 Acreage held 6.0 square miles

(Sheet 1—Maps No. 16 and No. 26)

Of the acreage held by the company in this area, about two-thirds is classed as possible for gas in the Berea Sand. The remaining acreage held, lying farther to the west, does not look good but has been classed as possible because of two wells that have obtained production (see Farm Map No. 16).

The structure as indicated by surface indications is very flat. Test wells which have been drilled indicate that the Berea Sand is thinning out in places.

Drilling should proceed from the proven areas "A" and "B," the edge wells of which are large producers.

The acreage held in the west portion of the area (about two square miles) is hardly worthy of a test.

MAP SHEETS NO. 1, NO. 2, NO. 3, NO. 4

AREA 302

Farm Maps No. 37, No. 36, No. 47, No. 46

Acreage held 14 square miles

This area is classed as possible for gas production in the Big Lime and Injun Sands.

There are at present four foreign gas wells producing from the Big Lime with initial open flows ranging from 800 M to 9,800 M; two company gas wells producing from the Big Lime; three small oil wells producing from the Injun; two oil and gas wells and four dry holes.

The position of this area in reference to the Clendenin Pool, and the structural relations make it worthy of at least four or five test wells.

MAP SHEET NO. 3

AREA 314

Farm Map No. 49 Acreage held 2½ square miles

The acreage held by the company borders the probable area No. 307. The proven gas pool situated about a mile to the west has not been defined in its eastern extent and it is possible that it will extend to the acreage here discussed.

This acreage should be held pending the testing of the area No. 307. Two test wells, however, should be drilled to prove or condemn the company acreage held in this area.

AREA 317

Farm Maps No. 48, No. 57, No. 58

Acreage held 24.9 square miles

This area is classed as possible for gas production in the Big Lime, Injun, Weir, and Berea Sands.

The area lies on the flanks and crest of the Warfield Anticline. Judging by experience in the developed portions of the field, the Big Lime is likely to be productive on the crest of the

anticline, and production is likely to be obtained from one of the deeper sands on the flanks.

One well has been drilled near the crest of the anticline and obtained some gas from the Injun Sand. This sand was reported as "badly broken" and other sands thin or missing.

Several test wells will be required to test the area.

AREA 321

Farm Map No. 47 Acreage held 2.7 square miles

This area is classed as possible for small production from the Injun and Squaw Sands. It is located on favorable structure but the sand conditions of surrounding territory are not good. Nearby wells drilled to the Berea horizon indicate that this sand is thin or missing.

Two wells, one in map square No. 64-59 and one in map square No. 66-57 will be sufficient to test the area.

AREA 323

Farm Map No. 57 Acreage held 5.7 square miles

This area is classed as possible for gas in the Big Lime and Injun Sands.

Production from adjoining areas is from the Big Lime and Injun. The area lies on the flank of the Warfield Anticline. One foreign gas well with initial open flow of 400 M cubic feet has been drilled in the northeast portion of the area.

This area should be tested by progressive drilling from the northeast. At least two wells should be drilled.

AREA 328

Farm Maps No. 58 and No. 59 Acreage held 10 square miles

This area is classed as possible although the indications make the territory quite doubtful. The structure is flat and adjoining areas are not very good. The Weir Sand which is the producing horizon to the west is thin in wells drilled near this area, and the Berea Sand is thin or missing. There is, however, a chance for gas in the Big Lime and possibly the Injun.

A dry hole has been drilled in map square 78-53 with show of gas in the Weir, however this does not wholly condemn the area. Other tests may be made in map squares 82-49 and 80-53.

AREA 329

Farm Maps No. 58 and No. 68 Acreage held 6½ square miles

This area is classed as possible. The acreage held in this area lies near the crest of the Hansford Anticline or on its flanks. One dry hole has been drilled in map square No. 76-49, however there is a good chance for gas in either the Weir, Berea, or Big Lime and a lesser chance in the Injun or Keener.

Production from the area adjoining on the west is from the Weir, while the area to the east is productive from the Berea. There is also some Keener or Keener and Injun production near the area.

This area should be tested by progressive drilling from the adjoining productive areas.

AREA 331

Farm Map No. 57 Acreage held 1.8 square miles

This area is classed as possible for gas production in the Big Lime and Weir Sands.

Two foreign wells with production from the Big Lime and one dry hole have been drilled in this area.

The area lies on the flank of the Warfield Anticline. Sand conditions are not very favorable. The nearest wells producing from the Weir are small and the Berea Sand is thin in nearby wells.

One or two wells would sufficiently test the company acreage.

AREA 340

Farm Maps No. 67, No. 77, No. 87

Acreage held 46.9 square miles.

This area is practically unexplored and it has been impossible to determine the underground structure. Surface structure shows no marked features, merely a monocline dipping to the northwest.

The portion of the area situated on farm map No. 77 is quite promising, as there is a group of foreign wells having good pro-

duction from the Weir Sand in probable area No. 344, surrounded by United Fuel Gas Company holdings. The wells referred to are some distance from the United Fuel acreage, the intermediate territory not having been tested.

Inasmuch as the foreign wells are a considerable distance from company holdings, it appears that the best policy would be to hold this acreage without testing until such a time as there is reason for a change in this policy. It is believed that the present foreign wells will have very little effect on company reserves.

AREA 346

Farm Maps No. 78 and No. 88. Acreage held 80.1 square miles

This territory is purely wildcat as very few tests have been made and those made have been unproductive. Surface structure shows a monocline dipping to the northwest with no interruption of consequence.

It would appear logical to make a careful study of this area with the idea of drilling a few test wells to determine the desirability of holding or abandoning acreage. From information at present available, the area does not look attractive.

MAP SHEET NO. 4

AREA 410

Farm Map No. 74 Acreage held 0.6 square miles

This area is classed as possible for gas in the Big Lime.

The acreage is scattered and it is not worth testing under present conditions.

AREA 414

Farm Maps No. 66-65 Acreage held 2.5 square miles

This area is classed as possible for gas production in the Big Lime and Berea Sands because there is production from these sands in adjoining areas. The Big Lime will probably prove the better of the two.

This area, situated along the flanks of the Warfield Anticline, is almost completely surrounded by probable areas.

MAP SHEET NO. 5

AREA 503

Farm Maps Nos. 82, 83, 81, 91, 92

Acreage held 13.9 square miles

This area is classed as possible for gas production.

The coal structure has been worked up for only the eastern portion of this area and little is known of this acreage in Martin County, Ky. A careful study should be made of this area to determine the location of a few test wells.

In the portion of the area in Mingo County, two test holes should be drilled, one in square No. 26-23, the other in square No. 28-25.

AREA 504

Farm Maps Nos. 82, 83, 81, 72, 61, 62, 52

Acreage held 29.6 square miles

This area is classed as possible for gas production from the Maxon Sand and the Big Lime.

The leaseholds in the northern part of this area lie on the flank of the Parkersburg Syncline. A few miles to the west is a large oil pool in the Berea Sand, the initial production however being but three or four barrels. To the east of the acreage is a band of dry holes. Practically all of the acreage is held in fee and as the cost of holding is negligible, it can be held until further foreign testing is carried on.

A number of tests have been made which came in as very small wells or dry holes. A few additional tests are recommended, at least three on leaseholds held on map No. 82 and one in square No. 16-33.

UNFAVORABLE TERRITORY

MAP SHEET NO. 2

AREA 201

Farm Maps Nos. 7, 8, 9, 17, 18

(Area extends also on map sheet No. 1)

This area is classed as unfavorable.

Most of the area and most of the company acreage within the area is located in the Parkersburg Syncline or along its southeastern flank. This syncline is a broad structure, the dip of the beds is slight, irregularities are uncommon and it does not appear a favorable area for the accumulation of either oil or gas. Furthermore a large number of tests have been made and salt water has been found in the Injun and Berea Sands in the trough of the syncline and extending over a considerable area. In a few tests a show of oil has been found in the Berea and a show of gas in the Injun and Berea.

The South Penn Oil Company has made a location in map square No. 62-101. This well should indicate what policy should be followed by the United Fuel Gas Company with leases held in map square No. 60-103.

One test should be made on the acreage in map squares No. 64, 97 and 99. If this test is dry and the test being made by the South Penn Oil Company is likewise dry, all leaseholds on farm map No. 7 can be abandoned without further testing.

The company holds 5.7 square miles located on the area of farm map No. 17 and 12.1 square miles on the area of farm map No. 18. A test made in the area of map square 95-64-66 should indicate the policy regarding this acreage.

Considered as a whole and with the exception of the two test locations suggested, it is believed that any other acreage in this area is of little prospective value.

AREA 217

Farm Maps No. 19, 29, 39, 40

This area is classed as unfavorable. Portions of the area appear to be favorably located structurally but the area has been given a rather thorough test and there appears little probability that gas will be discovered. Test wells in map square No. 90-71 and No. 86-77 would indicate the policy to be followed in regard to acreage held within the area of farm maps No. 29, No. 39 and No. 40. Other acreage held in area of farm maps No. 19 and No. 29 is in small scattered leases and does not seem worthy of further testing.

AREA 218

Farm Maps Nos. 18, 28, 27, 37, 38

This area is classed as unfavorable and recommendation is made that the acreage be abandoned without further testing. Numerous tests have been made throughout the area and no gas or oil of importance has been found.

MAP SHEET NO. 3

AREA 305

Farm Maps Nos. 47, 48, 57

(Connects with Area 401 on Sheet No. 4)

This area is classed as unfavorable. Test drilling has been done at various places in this area through the Berea Sand without success.

Although the area looks very unfavorable, it might be advisable to make a few tests before abandoning the acreage. The more likely locations would be in map squares No. 60-57; No. 60-55; No. 60-53; No. 60-51; No. 60-49. Small oil wells might be found in No. 68-65.

AREA 318

Farm Maps No. 48, 58, 49

This area is classed as unfavorable.

Some twenty-eight wells, five of which are company wells, have been drilled throughout the area and the only encouragement has been small shows. South of area No. 307, the area has not been well tested.

Structurally the area is a broad syncline. Its position on the trend of the Cabin Creek oil pools, the small oil pools in the Kanawha Field and the Injun oil pool located in map squares Ns. 82-84 east, 63-65 north, is the most interesting feature of the area. It would appear possible that oil may be found in the intervening areas.

Information taken from well records indicate that the sands are fairly thick. There is no indication of particularly favorable structure. It may be advisable to make tests in map squares No. 80-61; No. 82-61; No. 82-59; and No. 80-59 before abandoning the acreage.

AREA 324

Farm Map No. 47

This area is classed as unfavorable. It is located on the crest of the Warfield Anticline. A great many dry holes have been drilled in the locality and it appears doubtful that any worth while production can be secured. Short lived wells in the Big Lime are about as good as can be expected.

AREA 327

Farm Map No. 58

This area is classed as unfavorable.

Six dry holes have been drilled within the area. The Weir Sand which is the best producer in neighboring territory is thin in this area and the Berea Sand is thin or missing. No production is found in the Injun Sand.

The acreage should be abandoned without further test.

AREA 337

Farm Map No. 67

This area is classed as unfavorable.

The best chance of getting gas is in the Big Lime. The acreage held is small and is considered of little importance.

AREA 341

Farm Maps No. 67, 78

This area is classed as unfavorable.

This acreage has little to recommend it but should be held pending decision of policy regarding the Raleigh County acreage.

AREA 343

See Area 417

MAP SHEET NO. 4

AREA 401

Farm Maps Nos. 43, 44, 45, 46, 53, 56, 63

This area is classed as unfavorable as many dry holes have been drilled throughout. Structurally, there is nothing of importance yet found.

AREA 416

Farm Maps Nos. 63, 64, 65, 73, 74

This area is classed as unfavorable. Some 21 wells have been drilled within its area and all have been dry holes.

Since this acreage lies in what would seem "gas territory" and several square miles have not been tested, it is recommended that this area be tested in four or five places before surrendering.

AREAS 417 AND 343

Farm Maps Nos. 66, 74, 75, 76, 77

This area is classed as unfavorable. Most wells which have been drilled within the area have been dry holes; however, several producing wells of considerable importance have been drilled in the southwest portion. Company acreage held should be tested before surrendering.

MAP SHEETS NO. 4 AND NO. 5

AREA 418

Farm Maps No. 53, 62, 63

This area is classed as unfavorable. The wells drilled near this area have been proven dry, or only shows have been found. There are no structural features of consequence.

The acreage is considered insufficient to justify a test.

MAP SHEET NO. 5

AREAS 505, 506, 507, 508, 509

Farm Maps Nos. 72, 82, 83

This area is classed as unfavorable. Past drilling has already proven these areas to be dry and they can be abandoned without further tests.

TABLE NO. 4

Rock Pressure Production Data by Wells

(Arranged by Fields and Pools)

Note: Occasionally the rock pressure recorded for a well in a particular year is known from subsequent data to be erroneous. In these cases the erroneous pressure is shown within a bracket and has not been used. In some cases the rock pressure is recorded as "estimated." In these cases the estimated rock pressure is determined from known rock pressures of years immediately preceding and following that in which the pressure is estimated.

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—A

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
717	965	10-27-15					970	940	830	600		260	250	2
1043	850	12-17-18							870	520		220	190	1
1168	470	10-30-20								470		265	190	1
Rock Pressure Totals							970	940	1700	1590		745	630	3
Number of Readings							1	1	2	3		3	3	
Average Rock Pressure							970	940	850	530		248	210	1

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—A

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
7	1 674	10 27 15					58	104	118	296	137	25	46
8	3 536	12 17 18							122	385	162	142	90
9	2 133	10 30 20								42	201	97	109
Production							58	104	240	723	500	264	245
ulative Production							58	162	402	1125	1625	1889	2134

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—B

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
911	890	6-23-17					890	710	550	350		180	160	
933	910	8-12-17					910	840	740	420		225	190	
948	725	11-16-17					725	750	420	320		*230	190	
979	910	10-15-17					910	870	780	410		*230	190	
991	860	10-25-17					860	790	690	320	250	235	180	
1041	630	1-17-19							630	420	365	270	215	
1164	330	2-26-21				.					330	225	180	
1165	320	2-17-21				.					320	210		
1166		1-24-21				.					363	*280	180	
1167	400	12-19-20								400	338	210	185	
1200	380	2-28-21				.					370	240	210	
1202	300	5-27-21									320	175	160	
1209	400	5-19-21				.					408	*280	210	
1286						.							195	
1321						.								
						-								
Rock Pressure Totals							4295	3960	3810	2640	3064	2990	2445	
Number of Readings							5	5	6	7	9	13	13	
Average Rock Pressure							859	792	635	377	340	230	188	

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—B

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
911	4 817	6-23-17					38	147	307	182	110	55	55
933	2 826	8-12-17					35	52	174	234	104	55	44
948	5 253	11-16-17					35	343	357	285	103	54	42
979	4 030	10-15-17					127	68	133	271	130	46	53
991	2 885	10-25-17					21	93	118	176	66	52	41
1041	877	1-17-19							270	238	88	52	25
1164	500	2-26-21									24	55	43
1165	586	2-17-21									70	13	40
1166		1-24-21									128	73	51
1167	920	12-19-20								8	94	56	43
1180	2 405	2-28-21									34	119	112
1182	650	5-27-21									132	92	55
1189	375	5-19-21									23	46	26
1206												4	36
1321													10
Total Production							256	703	1359	1394	1106	772	676
Cumulative Production							256	959	2318	3712	4818	5590	6266

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—C

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
323	935	1-13-10				923	900	670	560	470	190	145	105	75
826	600	3-16-18						610	410	300	220	115	98	75
827	785	10-4-16				785	690	630	480	330	245	155	135	95
880	405	2-11-17												40
893	700	7-13-17					700	670	470	290	175	190	115	70
903	830	6-3-17					813	594	443	250	190		108	65
942	815	11-6-17					815	580	416	280		140	110	
952	825	9-19-17					825	640	460	280		142	120	82
954	790	11-15-17					790	600	520	260	210	130	90	70
972	825	9-24-17					825	600	450	271	200	105	110	75
977	840	8-27-17					840	630	480	240	190			
982	805	9-20-17					805	600	450	260	210	120	110	70
992	830	9-4-17					830	670	430	230	210	125	95	70
1003	810	10-19-17					810	700	490	240		130	90	60
1019	710	2-27-18						690	480	240		90	60	50
1021		8-25-17					742	587	433	250	210		95	75
1038	620	8-21-18							480	230	170	72	70	40
1039	550	10-30-18							480	230	165	85	55	30
1048	570	2-20-19							542		85			14
1078	475	8-12-19							475	210		100	90	70
1089		8-28-20											143	95
1103		5-22-20								358			130	90
1109	210	11-24-19								120	90	56	50	10
1118	230	2-16-20								167	85		42	34
1125	325	6-28-20								250		115	85	65
1153	204	9-10-20								223	194	60	45	45
1160	300	5-1-20								300		205		140
1165	280	8-26-20								320			125	90
1186	200	1-4-21									195	105	85	70
1182	285	11-29-20								285		110	95	70
1192	250	2-17-21									248			70
1228	200	6-15-21									180	85	70	45
1269														
1320														
Rock Pressure Totals						1708	10385	9471	8949	6884	3662	2580	2526	2040
Number of Readings						2	13	15	19	26	20	22	27	31
Average Rock Pressure						854	799	631	471	265	183	117	94	66

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—C

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	1 079	1-13-10				118	353	324	223	294	133	68	57
[illegible]	4 818	3-16-18						82	218	127	43	32	122
[illegible]	1 100	10-4-16				61	210	122	82	53	37	18	13
[illegible]	380	2-11-17					49	22	22	25	9	6	3
[illegible]	5 252	7-13-17					125	126	244	106	35	32	23
[illegible]	10 490	6-3-17					182	209	117	145	50	40	30
[illegible]	8 310	11-6-17					87	424	378	320	80	46	52
[illegible]	6 018	9-19-17					57	179	210	231	94	80	58
[illegible]	5 499	11-15-17					43	176	133	197	102	53	41
[illegible]	11 712	9-24-17					197	264	140	225	89	43	25
[illegible]	6 490	8-27-17					98	182	139	155	26		
[illegible]	5 800	9-20-17					31	166	74	116	61	34	23
[illegible]	8 310	9-4-17					39	154	95	145	52	45	18
[illegible]	4 553	10-19-17					173	408	163	182	19	19	13
[illegible]	21 875	2-27-18						50	240	334	126	53	42
[illegible]	3 706	8-25-17					20	155	137	127	44	34	18
[illegible]	5 850	8-21-18							135	207	26	19	12
[illegible]	2 227	10-30-18							70	81	23	17	11
[illegible]	8 704	2-20-19							82	170	75	52	23
[illegible]	5 253	8-12-19							30	217	123	73	35
[illegible]		8-28-20										28	17
[illegible]	1 511	5-22-20								68	144	54	61
[illegible]	213	11-24-19								22	41	47	19
[illegible]	2 073	2-16-20								81	39	36	8
[illegible]	1 117	6-28-20								53	32	27	17
[illegible]	126	9-10-20								14		10	6
[illegible]	677	5-1-20								78	66	41	17
[illegible]	1 580	8-26-20								56	104	23	44
[illegible]	2 000	1-4-21									107	73	54
[illegible]	920	11-29-20								12	109	51	56
[illegible]	786	2-17-21									26	70	33
[illegible]	1 700	6-15-21									25	72	37
[illegible]												20	29
[illegible]													18
[illegible] Production						179	1664	3043	2932	3841	1940	1316	1035
[illegible]mulative Production						179	1843	4886	7818	11659	13599	14915	15950

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—SALT AREA—CC

Well No	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
205	600	11-15-10				572		442	410				
322	620	10-28-10			622	603		Sold					
324	620	6-1-10			607	533		414		145	Abd.	6-15	1921
550	605	8-6-13			621	617		528	404	325			
711	582	8-26-15			582	526		416		185		98	85
953	560	7-16-17						491	295			215	112
980	455	11-21-17						460	Abd	1919			
981	490	11-10-17						490	225	Sold			
989	560	11-27-17						563	400	300		125	
1096	480	8-2-19							493	230		200	125
1106	525	6-26-19										Sold	1921
1199	270	9-7-20								270		120	80
Rock Pressure Totals					2432	2851		3804	2227	1455		758	402
Number of Readings					4	5		8	6	6		5	4
Average Rock Pressure					608	570		476	371	243		151	101

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—SALT AREA—CC

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
105	650	11-15-10			51	51	72	44	23	10	1		5
122	1 225	10-28-10				22	19	Sold					
134	4 650	6-1-10				125	248	100	222	44	Abd.	6-15	21
150	2 193	8-6-13				127	354	195	168	150	64	18	
171	7 771	8-26-15			443	235	230	141	286	99	101	78	33
183	1 893	7-16-17					73	114	12	12	2	86	48
190	1 726	11-21-17					4	13	Abd.	1919			
191	2 907	11-10-17					7	70	116	Sold			
195	5 817	11-27-17						250	189	209	104	48	42
196	1 188	8-2-19							21	133	73	42	17
198	1 109	6-26-19							9	13	5	Sold	1921
199	1 000	9-7-20								25	71	32	32
Total Production					494	560	1007	927	1046	695	421	304	177
Cumulative Production					494	1054	2061	2988	4034	4729	5150	5454	5631

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—D

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	K
654	645	9- 5-14			650	570	400	330	250	180	155	135	120	
741	775	1- 9-16				780	470	430	350	220	175	195	140	
755	745	3-25-16				780	470	430	350	220	175	195	122	
834	695	10-29-16				695	540	470	370	200		135	122	
862	495	1-31-17					475	425	325	245	165	190	120	
895	605	4-16-17					620	490	390	280	230	190	140	
896	495	5- 8-17					495	395	305	200	190	180	135	
949	520	7-13-17					524	410	329	242		160	125	
976	570	10-24-17					570	480	370	280	210	190	131	
Rock Pressure Totals					650	2825	4564	3860	3039	2067	1300	1570	1155	
Number of Readings					1	4	9	9	9	9	7	9	9	
Average Rock Pressure					650	706	507	429	337	230	186	174	128	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—D

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
64	233	9- 5-14			12	53	94	26	16	18	12	7	6
70	2 188	1- 9-16				104	259	151	105	26	25	45	24
75	4 152	3-25-16				160	262	112	97	134	36	67	43
84	2 500	10-29-16				57	141	88	67	85	18	26	27
82	8 082	1-31-17					253	76	40	13	99	68	58
85	3 757	4-16-17					29	193	138	187	102	55	36
86	3 214	5- 8-17					29	125	121	178	136	122	128
69	3 370	7-13-17					21	71	58	74	38	43	30
93	4 818	10-24-17					20	116	88	146	83	66	45
Total Production					12	374	1108	958	730	861	549	499	397
Cumulative Production					12	386	1494	2452	3182	4043	4592	5091	5488

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—E

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
133	915	5-15-10		620	560	470	300	280	240	200	158	115	100	
138	950	4-28-10	800	715	620	550	500	425	350	315	275	210	142	
145		8-24-08	637	560	461	331	208	173	149	150	104	70	80	
147		10-11-08	670	580	500	400	220	200	170	150	125	87	75	
148	500	7-13-08	680	600	520	350	220	170	150	130	105	80	70	
150		9-9-08	630	550	470	290	210	170	110			Abd.	1922	
159	875	10-16-10	570	520	440	300	280	210				Abd.	1921	
206	875	1-19-11	700	600	560	490	300	250	200	160	155	120	90	
215		4-20-09	700	610	500	400	220	210	170	150	135	100	80	
226	850	2-23-10	540	550	460	320	220	120	140	140	95	45	Abd.	
256	850	7-1-10	580	560	480	330	230	200	180	140	115	90	80	
265	800	1-10-11	620	570	540	400	260	180	170	140	120			
317	820	5-6-09	742	614	555	476	283	249	246	186	161	110	80	
338	700	6-25-11	620	550	450	310	250	150		Abd.	1920			
430	800	11-29-12		564	490	390	250	200	140	70	Abd.	1921		
431	775	11-13-12	700	580	540	450	260	220	180	170			80	
486	507	6-6-13		570	530	440	280	230	220	170	150		80	
536	755	8-5-13	805	700	600	525	450	410	345	165	140	125	122	
664	575	11-23-14			560	575	350	310	250	190	170	110		
681	565	4-9-15			570	500	330	280	230	190	155	126	100	
723	520	5-1-15			585	498	320	313	228	192	177	140	120	
917		4-8-15				Drowned out								
919	410	5-3-13					410	410	320	171	200	150	120	
920	250	10-1-13					260	270	210	150		Abd.	1922	
1143	150	12-8-20								150			Abd.	
Rock Pressure Totals			9994	10613	10991	8795	6611	5630	4398	3479	2540	1678	1419	
Number of Readings			15	18	21	21	23	23	21	21	17	15	15	
Average Rock Pressure			666	590	523	419	287	245	209	166	149	112	95	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—E

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
33	3 190	5 15 10		18	181	93	185	129	34	23	25	10	10
38	6 358	4 28 10	44	46	58	299	434	543	272	213	201	119	89
46	8 000	8 24 08	23	30	44	141	88	79	21	26	16	13	16
47	3 000	10 11 08	106	40	53	116	156	121	29	21	23	19	18
48	4 000	7 13 08	67	47	100	248	153	92	32	27	23	19	22
50	3 000	9 9 08	20	31	25	83	28	3	11			Abd.	1922
54	3 706	10 16 10	215	54	46	135	74	22				Abd.	1921
20	3 000	1 19 11	267	124	36	123	214	188	68	58	59	25	24
25		4 20 09	5	13	26	186	160	107	19	29	25	18	21
23	3 519	2 23 10	90	72	110	180	105	88	32	34	32	9	2
												Abd.	1923
26	6 018	7 1 10	97	72	87	233	246	143	36	42	27	9	24
35	2 626	1 10 11	28	34	51	72	120	66	37	24	20	3	2
37	8 174	5 6 09	112	193	116	163	438	335	171	121	116	77	74
39	2 753	6 25 11	47	35	66	150	95	19		Abd.	1920		
40	1 987	11 29 12		34	20	56	81	66	26	5	Abd.	1921	
41	7 194	11 13 12	239	163	26	137	120	139	41	34	13	13	15
42	6 383	6 6 13		106	27	156	258	139	61	30	9	11	30
52	4 552	8 5 13	11	322	265	292	220	88	91	33	14	29	18
44	1 998	11 23 14			8	79	105	28	47	30	22	16	19
45	942	4 9 15			16	79	74	10	19	12	17	13	12
53	1 475	5 1 15				66	76	10	39	30	38	15	10
57		Drowned out											
58	6 000	5 3 13					176	109	29	18	62	54	44
59	225	10 1 13					15	3	6	8	17	Abd.	1922
60	053	12 8 20								2	14	Abd.	1922
Total Production			1371	1434	1361	3087	3621	2527	1121	820	773	472	450
Cumulative Production			1371	2805	4166	7253	10874	13401	14522	15342	16115	16587	17037

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—F

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
125	930	12 30 09	580	540	420	220	160	120	70	70	40			
131	930	3 17 10	530	480	410	290	200	130	110	100		68	50	
132	940	4 5 10	530	470	380	240	160	100	80	80		39	46	
136	890	5 25 10		540	450	280	170	130	120	70		55	49	
146	705	10 11 08	620		480	220		120			Abd.	1920		
149		12 13 08	627	549	479	263	250	115	118			60	43	
166	800	9 5 10	560	490	450	350	310	220		60		Abd.	1922	
167	900	10 15 10	580	554	509	339	271	200	170		117	97	85	
170	750	7 27 10			402	371	329	230		60	Abd.	1921		
204	360	11 4 10						Abd.	1918					
272	900	3 11 11	530	440	360	200	140	100		52	55	43	42	
686	380	6 29 15			380	240	220			Abd.	1920			
696	350	12 29 15			350	280				Abd.	1920			
697	390	8 9 15			390	220		110	70	50		58	40	
705	450	10 27 15			450	380	120			Abd.	1920			
710	425	11 9 15					290	210	130	80	60	65	50	
978		3 16 16						130	110	72		65	50	
Rock Pressure Totals			4557	4063	5910	3893	2620	1915	978	694	272	550	455	3
Number of Readings			8	8	14	14	12	13	9	10	4	9	9	
Average Rock Pressure			570	508	422	278	218	147	109	69	68	61	51	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—EBREA AREA—F

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
25	8 360	12 30 09	67	73	215	244	223	227	101	50	17	1	
31	13 765	3 17 10	75	24	98	95	102	94	57	28	28	16	13
32	5 790	4 5 10	115	9	113	73	60	58	84	23	5	16	14
36	7 640	5 25 10		39	54	138	116	158	82	58	34	21	16
40	3 000	10 11 08	12		32	70	33	20	9		Abd.	1920	
45	1 380	12 13 08	92	37	89	172	158	115	83	42	37	18	13
46	184	9 5 10	3	2	20	10	23	32	41	9		Abd.	1922
47	6 358	10 15 10	528	45	20	273	142	99	16	8	30	31	24
71	393	7 27 10	22		21	9	28	30	113	9		Abd.	1921
24	083	11 4 10	12						Abd.	1918			
22	9 293	3 11 11	59	49	206	193	184	134	33	6	34	29	23
48	1 419	6 29 15			12	66	48	3		Abd.	1920		
66	877	12 29 15			46	139	83	19			Abd.	1920	
67	2 828	8 9 15			77	106	111	101	68	50	33	18	14
76	354	10 27 15			21	87	34	5		Abd.	1920		
70	12 299	11 9 15				91	352	390	336	68	86	46	33
93	1 200	3 16 18						163	165	90	60	33	17
Annual Production			985	278	1024	1766	1697	1648	1188	441	364	229	167
Cumulative Production			985	1263	2287	4053	5750	7398	8586	9027	9391	9620	9787

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
126	930	3 19 10	460	400	260	180	140	120	90	50		45	42
139	900	5 16 10	430	380	260	180	130	90	70	60			32
156	960	7 18 10	440	400	270	180	140	100	70	70		40	38
157	920	8 2 10	450	390	260	170	140	100	80	60		55	38
158	900	10 14 10	440	380	280	170	140	100	70	60	55	46	38
199		11 4 10	470	350	280		180		Abd	1919			
266	900	12 12 10	440	400	320	160	140	80		80	50	44	39
318	435	9 29 10										Abd	1922
321	790	6 2 10	440	390	260			80				Abd	1922
336	850	5 16 11	480	400	280			120	100	70		Abd	1922
337		6 17 11	449	391	272	200	150	105	80	45		Sold	1921
354	645	11 2 11	440	400	290	200	170	70	70	50		50	55
357		3 3 11	460	390	260	200	140	100	90	Abd	1920		
358	600	5 27 11	450	390	270	200	140	110	100			40	47
372	650	2 10 12	480	380	260	200	100	70	100	53		20	*15
396		4 21 12	450	365	238		130	110		Abd	1920		
539	650	11 21 12	490	330	250	180	80	60	70	50		39	*32
540	650	4 26 13		340	260	160	70	60	60	60		45	55
549	357	6 11 13		400	270	190	150	110	90	55		55	48
572		8 29 13		375	249	193	53	47	Abd	1919			
586		3 2 14		340	263	194	115	90		80		Abd	1922
632	320	10 31 14			270	180	130	90	60	50		49	41
678	265	6 22 15			270	210	140	60			Abd	1920	
699	250	10 9 15			250	180	130	90	80	72		47	
886		2 20 16						92	60	62		51	44
Rock Pressure Totals			7269	7591	6142	3527	2708	2054	1340	1027	105	626	564
Number of Readings			16	20	23	19	21	23	17	17	2	14	14
Average Rock Pressure			454	380	267	186	129	89	79	60	53	45	40

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—G

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	12 500	3 19 10	303	155	179	205	109	76	41	12	21	21	28
[illegible]	24 932	5 16 10	170	99	230	91	47	103	69	21	12	12	13
[illegible]	8 310	7 18 10	135	74	83	127	70	59	55	13	23	19	10
[illegible]	9 293	8 2 10	106	19	85	47	23	18	4	19	13	9	11
[illegible]	9 293	10 14 10	105	9	39	126	107	51	63	33	26	25	20
[illegible]		11 4 10	16	10	16	2	14		Abd.	1919			
[illegible]	7 500	12 12 10	138	22	106	122	55	66	11	9	17	14	9
[illegible]	3 084	9 29 10	30	29	41	45	8	18	2	4	2	Abd.	1922
[illegible]	5 376	6 2 10	94	55	92	25	16	26	10	5		Abd.	1922
[illegible]	9 097	5 16 11	222	82	324	220	123	98	40	30	11	Abd.	1922
[illegible]	10 170	6 17 11	195	34	111	111	30	19	22	21	4	Sold	1921
[illegible]	3 706	11 2 11	178	140	58	30	34	20	8	30	22	15	20
[illegible]	2 626	3 3 11	232	21	65	58	25	18	1	Abd.	1920		
[illegible]	880	5 27 11	210	39	52	57	24	20	8		11	3	4
[illegible]	5 726	2 10 12	325	99	92	67	39	14	1	19	12	3	Abd. 1923
[illegible]	2 753	4 21 12	81	54	65	12	36	28		Abd.	1920		
[illegible]	2 100	11 21 12	167	106	90	27	11	4	4	15	7	4	Abd. 1923
[illegible]	1 800	4 26 13	294	91	133	9	8	3	17	13	11	19	16
[illegible]	5 842	6 11 13		92	191	200	100	83	43	21	46	28	33
[illegible]	2 514	8 29 13		216	115	21	8	3	5	Abd.	1919		..
[illegible]	2 974	3 2 14		44	176	137	70	96	86	39	13	1	Abd. 1922
[illegible]	2 514	10 31 14			141	166	75	143	85	67	51	26	22
[illegible]	892	6 22 15			7	19	44	7		Abd.	1920		
[illegible]	2 616	10 9 15			37	269	173	160	93	67	22	26	
[illegible]	2 500	2 20 16						34	58	42	25	17	16
[illegible] Production			3001	1490	2528	2193	1249	1167	726	480	349	242	202
[illegible]ative Production			3001	4491	7019	9212	10461	11628	12354	12834	13183	13425	13627

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
143			825	446	387		183		Abd.	1919			
160		7-24-10									Abd.	1921	
165	910	9-14-10	600	410	340	245	180	150	110		85	75	65
523	795	2-28-13		303	243	215	125	63	Abd.	1919			
537	650	4-23-13	600	296	255	215	135	100	80			50	35
538	650	4-25-13	600	306	256	187	135	20	Abd.	1918			
543	405	5-17-13	400	290	256	215	140		50			53	45
562	575	7-26-13	510	329	233	198	140	60	40	30			Abd.
651	360	9-19-14			260	240	175	150	120	90		70	50
679	330	12-20-13			298	235	205		170			53	45
831	220	8-7-13				230						Abd.	1921
Rock Pressure Totals			3535	2380	2528	1980	1418	543	570	120	85	301	240
Number of Readings			6	7	9	9	9	6	6	2	1	5	5
Average Rock Pressure			589	340	281	220	158	(91)	95	(60	(85)	60	48

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—H

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
48			19	15		4	18	23	Abd.	1919			
46		7-24-10		2	7	3	10	3			Abd.	1921	
45	13 765	9-14-10	353	225	88	105	172	128	69	37	27	36	33
53	5 000	2-28-13	323	90	129	59	1	7	Abd.	1919			
57	3 700	4-23-13	423	301	92	64	15	15	31	17	15	11	16
58	2 250	4-25-13	245	161	103	37	47	5	Abd.	1918			
66	4 225	5-17-13	202	210	103	61	10	3	62	34	21	23	22
62	3 214	7-26-13	89	201	91	84	24	13	10	9	5	1	Abd.
61	3 020	9-19-14			323	321	195	190	183	184	106	68	1923 38
70	1 225	12-20-13			33	121	37	50	53	36	15	12	9
69	829	8-7-13				1	34	10		2	Abd.	1921	
Annual Production			1654	1205	969	860	563	447	408	319	189	151	118
Cumulative Production			1654	2859	3828	4688	5251	5698	6106	6425	6614	6765	6883

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
151	975	7-9-09		490	390	260	220	170	140	110		58	60
462	895	1-13-13	600	440	380	270		135	118	98		70	70
541	625	7-29-13	600	400	380	280	220	160	105	98		95	80
560	545	10-18-13	545	450	380	280	240	120			Abd.	1921	
561	525	10-22-13	525	410	350	250	180	130	105		Abd.	1921	
Rock Pressure Totals			2270	2190	1880	1340	860	715	468	306		223	210
Number of Readings			4	5	5	5	4	5	4	3		3	3
Average Rock Pressure			568	438	376	268	215	143	117	102		74	70

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—1

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	4 000	7 9 09	203	225	100	100	194	42	97	74	52	48	18
2	4 818	1 13 13	455	166	17	74	88	66	58	47	24	20	13
3	2 841	7 29 13	79	93	13	45	86	88	61	31	33	27	16
4	1 826	10 18 13	59	206	10	100	178	68			Abd.	1921	
5	1 890	10 22 13	24	116	19	99	143	81	40	10	Abd.	1921	
Total Production			820	806	159	418	689	345	256	162	109	95	47
Cumulative Production			820	1626	1785	2203	2892	3237	3493	3655	3764	3859	3906

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
124		6-30-09	972	714	495	310	205						Abd.
144	387	10-30-08	900	580	440	280	200	140	130	105	90	72	58
432	960	10-10-12	950	690	550	320		155	96			52	50
454	920	12-8-12	960	640	440	300	200	120	100	80		53	54
542	415	10-13-15			415	270	180	112				Abd.	1922
600	885	6-20-14		885	570	410		125				54	50
626	850	7-16-14		808	568	343	122	Sold	1918				
649	695	9-3-14		695	610	480	220	138	107	95		55	62
685	510	7-2-15			510	280	170	80	85	52		140	48
698	450	8-9-15			425	270	180						
702	525	5-15-15			525	200	170	Sold	1918				
774	285	8-1-16					130	90	72	62		30	40
975	160	7-7-18						150	120	120	90	62	48
Rock Pressure Totals			3782	5012	5548	3463	1777	1110	710	514	180	518	410
Number of Readings			4	7	11	11	10	9	7	6	2	8	8
Average Rock Pressure			945	716	504	315	178	123	101	86	(90)	65	51

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—J

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
124	4 000	6-30-09	35	93	213	116	52	19	25	13	16	7	Abd. 1922
144	5 000	10-30-08	70	175	69	60	54	41	36	24	10	14	9
162	3 706	10-10-12	24	39	83	77	62	41	33	9	16	13	7
164	7 863	12-8-12	196	470	170	148	106	102	77	35	43	26	19
192	3 578	10-13-15			6	152	41	140	81	18	39	Abd.	1922
180	8 310	6-20-14		116	944	357	197	83	31	6	30	18	12
126	5 821	7-16-14		70	347	93	31	14	Sold	1918			
169	8 682	9-3-14		47	562	595	186	78	24	24	29	27	21
165	3 300	7-2-15			46	88	73	86	48	23	19	6	8
198	5 127	8-9-15			221	162	117	220	167	91	30	30	6
202	1 419	5-15-15			15	55	19	Sold	1918				
124	1 784	8-1-16				26	38	20	34	40	29	15	6
175	168	7-7-18						5	11	10	7	7	8
Total Production			325	1010	2676	1929	976	849	567	293	268	163	96
Cumulative Production			325	1335	4011	5940	6916	7765	8332	8625	8893	9056	9152

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—BEREA AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
824	570	8-29-16				600				160		64	
837	355	11-27-16				355		135		Abd.			
840	352	1-18-17					350	150		90			55
841	580	11-14-16				580				100		55	50
876	272	2-26-17					272	140		90		61	54
877	355	2-2-17					310	205	125	150		118	75
879	215	2-6-17					200	190		Abd.	1920		
910	345	5-25-17					330	200	150	110		95	70
931	385	8-16-17					407	280	175	150		75	78
1050	325	2-26-19							240	195	110	102	68
1119	145	3-10-20								110		68	
Rock Pressure Totals						1535	1869	1300	690	1155	110	638	450
Number of Readings						3	6	7	4	9	1	8	7
Average Rock Pressure						512	312	186	173	128	110	80	64

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—K

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	8 309	8 29 16				502	295	86	41	16	10	4	23
[illegible]	1 301	11 27 16				6	78	22	9	Abd.			
[illegible]	9 500	1 18 17					474	211	60	27	11	27	23
[illegible]	4 000	11 14 16				84	61	20	19	20	17	17	10
[illegible]	3 657	2 26 17					157	92	29	17	30	28	19
[illegible]	1 943	2 2 17					357	209	80	72	35	23	19
[illegible]	1 117	2 6 17					38	21	15	Abd.	1920		
[illegible]	2 900	5 25 17					30	176	67	33	10	22	13
[illegible]	3 437	8 16 17					47	181	126	50	28	20	11
[illegible]	1 225	2 26 19							140	91	18	26	12
[illegible]	106	3 10 20								12	5	4	1
													Abd. 1923
[illegible] Production						592	1537	1018	586	338	164	171	131
[illegible]mulative Production						592	2129	3147	3733	4071	4235	4406	4537

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD SPENCER SAND BEREA AREA

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	192
985	635	9-15-17					635	475	275			225	10
1051	435	3-20-19							450	180	140	105	7
1055	595	5-21-19										132	8
1120													9
1121	305	4-30-20								205		105	8
1122	240	11-19-20								242			8
1141		1-24-19								159		92	6
1191	220	1-21-21									220	125	9
1230	150	5-12-21									145	110	7
Rock Pressure Totals							635	475	725	786	505	894	75
Number of Readings							1	1	2	4	3	7	
Average Rock Pressure							635	475	363	197	169	128	8

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—BEREA AREA—L

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	5 500	9 15 17					217	1138	457	104	12	20	37
[illegible]	4 550	3 20 19							526	294	73	66	49
[illegible]		5 21 19								3	12	20	3
[illegible]		..								92	93	13	73
[illegible]	3 250	4 30 20								173	145	58	31
[illegible]	1 000	11 19 20								12	59	6	14
[illegible]	2 800	1 24 19								93	86	44	23
[illegible]	2 500	1 21 21									165	9	70
[illegible]	300	5 12 21									23	19	15
[illegible] Production							217	1138	983	771	668	255	315
[illegible]ative Production							217	1355	2338	3109	3777	4032	4347

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—SPENCER SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
463		3- 4-14			600	585		545		495		450	430
501		4-24-13			652	635		585		•585		•475	460
590		2-22-14			610	574		435		330		280	•270
714		7- 6-15			588	590		433		335		•295	272
715		12-17-15				600		440		370		280	234
878	470	5- 2-17						461		429		•280	250
1123	344	10-31-20								344		•270	234
Rock Pressure Totals					2450	2984		2899		2888		2330	2150
Number of Readings					4	5		6		7		7	7
Average Rock Pressure					613	597		483		413		333	307

•Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—SPENCER SAND—INJUN AREA—M

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	213	3- 4-14			2	43	81	87	71	59	45	55	41
[illegible]		4-24-13				14	58	25	8	11	25	20	18
[illegible]	725	2-22-14			3	62	192	115	25	32	25	5	20
[illegible]	1 187	7- 6-15				39	155	139	117	83	56	70	61
[illegible]	338	12-17-15				29	125	95	66	50	50	48	33
[illegible]		5- 2-17							77	135	68	45	29
[illegible]	1 295	10-31-20								2	72	79	82
[illegible] Production					5	187	611	461	364	372	341	322	284
[illegible]mulative Production					5	192	803	1264	1628	2000	2341	2663	2947

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—A

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
257		4-20-10	440		350	335		267	244	237	220	227	150	
436	450	11-18-12	449		200	310		265	223	215		215	195	16
449	410	3-18-13	409		285	280		215	178	170		155	161	14
482	450	4-4-13	446			285	245	212				D. O.		
488	400	5-7-13	485		425	375			292	206		80	47	
489	490	4-28-13	495			300	245	220	185	165	D. O.	D. O.	35	
510	410	4-21-13	445		400	330	285	270	248			200	205	16
524	510	2-7-13	501		377	347		250	202	160	100	100	60	
528	375	6-1-13	455	465	304	285	168		135			100	80	
530	430	6-9-13	475		375	370		320	275	250		231	*200	22
545	420	5-31-13	458		315	285		210	185	110		D. O.	108	
553	420	5-2-13	410		310	265		165		Abd.	1920			
563	485	8-23-13	431			270	225	195	119	95		55	60	
571	450	9-10-13	493	470	392	330		270	208	175		100	125	12
573	315	8-17-14				290	225	228		150	98	65	45	
588	420	12-10-13	420					226	170	170	100	135	105	
617	300	11-19-13				270		200	150	95	85	D. O.	Abd.	192
618	300	8-17-14				275	225	155	140		98	40	38	
619	330	12-20-13	340	340	305	280	215	210	170	135	100	125	100	
620	355	2-3-14		355	300	285	215	200	150	130	98	95	82	
621	400	2-5-14		418	393	340		180	190	112	40	Abd.	3-10-22	
622	390	2-25-14				335	292	250	150	125	105	75	30	
635	350	10-3-14		350	340	320	270	235	190	175	100	100	96	
636	410	10-11-14		420	404	365	308	280	225	225	100	65	98	
645	410	8-11-14			371	300	250	215	145	84		70	52	
646	360	8-6-14		370	383	300	252	225	165	122		115	85	
872	405	1-29-17					405	273	200	142		155	140	
909	260	2-19-17					266	275		115		80	68	
1028	275	7-24-16							97	75				
1029	225	9-16-16						255			Oil			
1035	270	7-12-16						270	210	210		180	130	
1053	225	4-24-17							208	165		175	*175	
1060		9-8-19							275	114		80	75	

*Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—A

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
3 214	4-20-10	49	36	41	28	30	16	7	8		27	15
1 511	11-18-12	62	188	168	100	56	60	74	71	92	124	98
857	3-18-13	12	17	21	119	75	71	102	101	99	96	105
554	4- 4-13	15	28	21	18	26	19	15	4	2	1	1
551	5- 7-13	13	77	102	41	25	44	15	20	30	10	3
1 679	4-28-13	29	342	57	97	227	118	197	153	D. O.		2
786	4-21-13	45	245	238	127	72	62	69	107	135	144	108
3 175	2- 7-13	91	151	96	74	132	133	159	157	53	65	27
1 439	6- 1-13	56	26	24	39	21	16	6	6	41	42	19
527	6- 9-13	44	158	186	125	94	91	105	217	247	241	159
998	5-31-13	51	400	82	82	144	147	189	68	28	20	14
540	5- 2-13	8	15	5	8	9	6		Abd.	1920		
2 767	8-23-13	5	13	22	9	16	15	7	10	29	21	11
1 024	9-10-13	18	22	32	46	55	30	40	22	14	20	16
1 225	8-17-14		21	96	79	109	55	89	96	26	24	3
1 741	12-10-13		115	62	96	98	57	84	75	52	21	19
1 117	11-19-13		5	6	10	21	20	4	4	1	D. O.	Abd. 1923
304	8-17-14		7	9	25	31	9	10	7	7	9	2
1 225	12-20-13		8	7	21	27	21	41	39	12	17	2
2 251	2- 3-14		30	109	107	159	129	163	162	53	70	102
999	2- 5-14		19	27	20	9	4	6	8	12	Abd. 3-10-22	
712	2-25-14		43	94	101	126	101	61	76	36	35	7
1 117	10- 3-14		8	50	39	44	49	62	55	18	21	16
2 278	10-11-14					132	102	126	115	33	22	13
600	8-11-14			40	52	36	27	28	16	17	11	12
600	8- 6-14		5	49	70	42	35	36	27	18	33	22
4 553	1-29-17					43	9	169	207	140	211	202
550	2-19-17					27	56	43	31	17	21	13
575	7-24-18							129	53		Oil	
680	9-16-18							64	27	Oil		
1 590	7-12-18						2	186	188	134	155	138
963	4-24-19							60	94	83	89	61
960	9- 8-19								77	52	59	41

ROCK PRESSURE DATA—Continued

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—A

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
1080	245	9- 2-19							155	147		57	•50	N
1081	210	8-30-19							175		Oil			
1082	180	11-10-19							180	132		90	80	7
1083	280	10-14-19							280	115			90	2
1084		1-13-20								49				D
1085	260	9- 6-19							223	163	119	103	78	6
1087	230	9- 9-19							205	122			72	6
1094		10- 6-19								159		77	85	6
1097		12-22-19												
1113	315	9-10-19							315	65		(15	Abd.	192
1114	230	9-19-19							230	53	100	(17		5
1125	225	9- 9-19								132		90	72	4
1126	225	12-16-19								137		43	•35	4
														19
1127	225	12-17-19								62		D. O.	Abd.	192
1128	300	8-26-19								185		148	128	18
1139		2-14-20								175		D. O.	Exhaust	
1140		6-22-20										158	145	12
1189	215	2- 3-21									154	170	140	14
1302	165	4-17-23												14
1342	155	9- 1-23												13
Rock Pressure Totals			6706	3198	5744	7442	3216	6169	6712	5291	1043	3727	3720	332
Number of Readings			15	8	16	24	13	26	34	38	11	33	38	4
Average Rock Pressure			447	400	359	310	247	237	197	139	95	113	98	8

*Estimated.

ANNUAL PRODUCTION—Continued

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—A

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
180	1 109	9-2-19							16	204	47	40	
181	685	8-30-19								65	Oil		
182	685	11-10-19								84	67	74	50
183	800	10-14-19								79	47	1	Used at Gas. Plt.
184	700	1-13-20								22			
185	880	9-6-19								52		1	28
187	700	9-9-19							7	72	47	1	Gas Used on Lease
194	497	10-6-19								37	19	10	9
197	248	12-22-19								20	14	1	
113	9 800	8-10-19							6	24	11	2	Abd. 1922
114	2 777	9-19-19							3	7	10	3	1
125	1 054	9-1-19								80	76	73	38
126	578	12-16-19								58	33	10	Abd. 1923
127	780	12-17-19								32	2	Abd.	1922
128	680	8-26-19								50	42	28	35
139	728	2-14-20								39	36	D. O.	Exh.
140	1 054	6-22-20								35	125	146	131
189	290	2-3-21									26	27	10
302	134	4-17-23											20
342	605	9-1-23											16
ual Production			498	1989	1644	1533	1886	1504	2378	3261	2083	2026	1567
mulative Production			498	2487	4131	5664	7550	9054	11432	14693	16776	18802	20369

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—SQUAW AREA—A-A

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
280					316	300		195	133	98			65	
316	520	5 4 11	(520)	420	372	345		279	253	245	(220)	155	142	1
341	440	9 28 11			365	336		285	190	175		130	95	D
342	465	10 5 11			358	350		250		187		100	95	
343	450	12 1 11			332	325		200	180	132		82		
458			(400)		316	291		250	150	120		D O	Abd	6
591		12 24 13		410	327	315	(175)	(150)				75	70	
597	320	B.L. & Squaw												
		5 22 14			(305)	(235)	200					*80	70	
599	370	5 11 14			345	313		(207)		192		100	90	
Rock Pressure Totals				830	2731	2575		1459	906	1149		722	627	
Number of Readings				2	8	8		6	5	7		7	7	
Average Rock Pressure				415	341	322		243	181	164		103	90	

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—SQUAW AREA—A-A

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
			76	55	58	22	81	51	49	39	41	33	24
	7 191	5 4 11	221	64	131	98	39	48	19	18	13	190	150
	4 138	9 28 11	202	123	83	111	238	153	261	218	7	52	9
	3 196	10 5 11	81	53	57	54	68	66	77	69	42	41	31
	1 302	12 1 11	49	33	32	29	37	52	60	41	26	26	5
			77	69	44	22	57	63	91	35	28	Abd.	6 2 22
	1 301	12 24 13		54	45	20	14	15	50	40	37	43	13
	BL 186	B L. & Squaw											
	2 018	5 22 14		5	26		24	12	41	31	37	39	23
	3 536	5 11 14		13	9	47	80	140	119	94	65	71	80
Production			706	469	485	403	638	600	767	585	296	495	335
ulative Production			706	1175	1660	2063	2701	3301	4068	4653	4949	5444	5779

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
8	500	12-26-03	422	415	410	408	370	350	Abd.	3-11	19		
14	505	12-22-05	(410)		(410)	(405)		(340)	(318)		(295)	(260)	230
25	520	12-6-05	402	370	367	358		305	295	277		285	225
26	505	5-14-07	408	395	382	386		324	305	272		245	230
28	500	8-13-06	436	413	420	417		Abd.	2-23	18			
29	505	7-2-06			410	400			330	295	280	250	220
31	505	10-30-06	440	425	425	396		337	298	272	240	245	
33	480		447	425	419	401		333	285	263	237	220	170
39	505	5-14-07	410	390	388	375		325	300	272		245	200
43	500	11-15-07	432	410	400	410	399	340	318	300		308	252
45	505	3-15-08	425	395	387	376	(300)	317	305	277		252	230
53	530	4-2-09	436	417	408	400	366	350	313		270	180	220
118	515	4-18-07	442	415	406	395	320	316	300		(245)	260	240
129	490	3-2-10	432	417	408	401		340	330	295		230	210
232	425	12-27-11	424	417	409	404	(305)	333	309	295	284	252	225
235	400	3-14-10	427	(405)	(401)	396		335	310	302	292	255	225
255	450	4-19-10	423	407	420	(395)	355	350	316	298	275	245	205
398	460	7-25-12	445	415	408	400		338	320	290		262	235
422	500	10-5-12	448	417	419	411		359	339	303	286	240	225
466	390	7-3-15			385	383	330	317	290	270	250	245	205
477	430	7-8-13	455	430	411	394		326	300	292		260	235
478	445	3-28-13	468	440	417	400	360	327	308	298	274	262	238
480	450	6-5-13	477	450	432	402	365	342		258		200	180
481	425	4-21-13	493	460	426	392	380	340	310			195	180
525	410	3-9-13	477	445	428	406	341		295	218		153	133
544	400	9-11-13	402	390	379	373	343	318	305	280		255	215
555	430	7-9-13	428	435	414	404	360	345	300	280		250	195
565	425	12-6-13		460	432	410	365	344	317	305		265	240
577	430	7-16-15			430	414	380	350	310	249		220	200
579	427	5-15-13		430	416	396		323	300	292	263	235	228
584	430	11-15-13		465	447	437		350	318	285	270	240	240
611	455	5-27-14		(475)	458	424		370	322	(365)		295	202
628	375	11-24-14			373	369	318	315	305			252	220
629	390	1-27-15			390	383	332	315	305	277		259	215

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—B

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	8 616	12 26 03	153	57	5	32	26	73	Abd.	3 11	19		
2	7 038	12-22 05	59	20	2	30	132	53	47	58	56	102	69
3	7.075	12 6 05	100	56	10	61	51	67	70	65	74	69	77
4	6.075	5 14 07	63	31	13	23	54	31	37	29	16	11	12
5	7.182	8 13 06	5	8	2	2	7	Abd.	2 23	18			
6	2 950	7 2 06			2	6	41	68	32	69	21	32	22
7	4 553	10 30 06	67	40	69	46	36	21	22	21	3	1	53
8	6 075		72	49	79	72	80	62	60	58	11	35	104
9	6 075	5 14 07	34	18	31	32	30	35	36	33	12	19	77
10	2 551	11 15 07	14	44	119	61	17	92	71	49	39	45	40
11	5 198	3 15 08	72	45	9	42	50	48	45	37	28	47	22
12	3 687	4 2 08	11	12	2	5	76	27	24	29	13	8	22
13	10 500	4 18 07	155	46	32	35	57	50	49	36	35	53	50
14	7 475	3 2 10	3	10	2	5	66	52	25	40	34	41	26
15	2 356	12 27 11	14	7	2	7	82	39	40	36	31	47	36
16	10 170	3 14 10				48	117	46	62	67	65	109	88
17	2 626	4 19 10	7	7	4		70	61	32	25	25	42	30
18	6 079	7 25 12	103	175	3	14	119	105	48	68	42	30	17
19	5 253	10 5 12	9	4	5	27	37	31	22	13	13	21	27
20	1 179	7 3 15			10	51	36	45	48	45	17	35	174
21	2 652	7 8 13	40	69	86	47	106	57	62	37	34	46	52
22	5 571	3 28 13	50	79	85	56	105	75	79	47	12	28	34
23	766	6 5 13	19	34	61	48	93	54	91	17	98	97	79
24	1 224	4 21 13	24	46	70	28	41	34	58	121	101	170	132
25	1 770	3 9 13	4	5	15	8	22	13	39	95	13	23	42
26	1 136	9 11 13	10	40	60	5	53	75	39	21	11	39	42
27	1 987	7 9 13	17	24	2	7	110	52	64	51	26	54	121
28	5,817	12 6 13		71	59	86	155	140	123	88	56	103	100
29	2 079	7 16 15			29	62	89	60	84	262	220	153	126
30	2 797	5 15 13		34	27	46	68	68	56	36	32	43	42
31	3 959	11 15 13		14	2	14	101	59	48	40	45	60	49
32	2 937	5 27 14			73	7	124	96	88	66	67	39	19
33	2 185	11 24 14			18	38	81	45	46	32	26	19	27
34	2 251	1 27 15			19	39	78	39	45	35	28	25	24

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
667	400	4- 2-15			382	373	325	318	315	280		250	225
671	400	5-20-15			402	397	350	325	308	295		268	232
682	370	7-27-15			(363)	363	335		300	267	(280)	255	225
691	400	8-17-15				398	(310)	325	315	287		295	230
692	400	10-30-15				394	380	332	300	295		268	230
718	415	10- 7-15				416		362	346	(335)	293	260	240
727	400	12-16-15				393	360	327	300	270		260	230
728	410	11-15-15				402	355	338	295	258		202	170
730	385	12-13-15				385	360	323	300	268	240	240	210
930	360	7- 4-17						331	300	295		268	240
964	345	4- 2-18						335	315	287		260	240
1057	310	12- 8-19								300		240	210
1103	325	1-27-20								325		220	195
1124	310	3-23-20								293		265	225
1133	280	7-30-20								281		250	252
1190	210	11-30-20											
1267	250	8- 9-22											215
1268	..												243
1284	290	2-27-23											
1285	250	12- 9-22											228
1303	217	1-20-23											
1305	190	4- 6-23											
1344	250	12- 4-23											
1345	200	8- 4-23											
1351	245	10-24-23											
Rock Pressure Totals			10072	10948	13159	16242	8169	13350	12652	10991	3514	10896	10708
Number of Readings			23	26	32	41	23	40	41	39	13	44	49
Average Rock Pressure			438	421	411	395	355	334	309	282	270	248	218

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—B

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
67	1 892	4- 2-15			17	18	76	43	52	37	26	20	22
71	3 490	5-20-15			31	27	70	59	55	36	26	37	33
82	1 119	7-27-15			17	9	71	67	34	36	25	23	12
91	3 493	9-17-15				7	109	107	84	62	39	37	38
92	1 592	10-30-15				34	83	68	71	51	43	66	47
118	1 25	10- 7-15				23	48	49	27	35	26	38	45
127	1 117	12-16-15				32	49	29	27	21	16	28	40
128	2 192	11-15-15				63	73	82	54	50	12	17	44
130	999	12-13-15				25	42	39	39	38	9	30	119
90	1 930	7- 4-17						77	75	58	43	58	71
94	1 120	4- 2-18						19	31	23	19	24	12
57	4 257	12- 8-19								43	35	37	32
03	1 119	1-27-20								14	18	11	23
24	2 100	3-23-20								20	25	32	70
33	1 300	7-30-20								6	32	39	24
90	1 700	11-30-20								11	1		
67	500	8- 9-22										14	33
68												18	30
84	431	2-27-23											27
85	789	12- 9-22											24
03	1 187	1-20-23											229
05	915	4- 6-23											59
44	1 770	12- 4-23											
45	586	8- 4-23											
51	1 593	10-24-23											16
Total Production			1105	1045	1072	1328	3031	2511	2241	2267	1699	2175	2885
Cumulative Production			1105	2150	3222	4550	7581	10092	12333	14600	16299	18474	21359

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—C

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	N
42	480	4-30-07	385	(352)	369	(299)	325	323	280	270		250	185	
46	505	5-4-08	370	362	341	330		306	285	239		D.O.	190	
121	450	5-10-09	372	357	352	340		(300)	305	(248)		265	195	
175	505	9-20-10	383	377	(385)	363		330	285	280		245	185	
180	443	1-18-11	388	(367)	(386)	361	340	335	290	280		255	210	
225	480	10-28-11 1908	(425)	(435)	442	428		353	285	275		240	*205	
293	440	8-9-11	(400)		(330)		(310)	(265)				(245)	205	
627	355	10-4-14			(356)	358		(300)	300			263	205	
764	380	11-16-16				(390)		325	265	250		230	170	
950	320	9-4-17					315	300	283	251		265	200	
Rock Pressure Totals			1898	1096	1504	2180	980	2272	2578	1845		2013	1950	
Number of Readings			5	3	4	6	3	7	9	7		8	10	
Average Rock Pressure			380	365	376	363	327	(325)	286	264		252	195	

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—C

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1021	1922	1923
		1909											
42	2 923	4-30-07	13	52	56	19	8	35	31	22	34	34	99
46	6 089	5-4-08	31	17	23	3	21	25	6	17	5	12	8
121	5 100	5-10-09	43	41	21	23	20	39	23	20	23	23	25
175	1 802	9-20-10	21	52	47	33	42	53	38	26	33	48	75
180	3 214	1-18-11	31	105	92	48	47	68	49	38	44	64	154
225	1 671	10-28-11	7	39	21	25	57	45	25	18	17	25	31
		1908											
253	789	8-9-11	72	56	45	74	73	59	48	47	67	73	56
327	2 929	10-4-14			29	32	38	38	20	25	20	20	17
364	1 119	11-16-16					71	105	122	76	92	91	50
490	2 626	9-4-17					8	37	34	26	28	24	29
Annual Production			218	362	334	257	385	504	396	315	351	414	544
Cumulative Production			218	580	914	1171	1556	2060	2456	2771	3122	3536	4080

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—CC

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
746	500	2-9-16				493	480	460	400	385	(391)	370	340
941	475	6-13-17					(393)	(420)	430	425	(424)	370	260
Rock Pressure Totals						493	480	460	830	810		740	340
Number of Readings						1	1	1	2	2		2	1
Average Rock Pressure						493	480	460	415	405		370	340

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—CC

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
746	3 706	2-9-16				7	182	162	150	148	92	109	185
941	513	6-13-17					32	85	43	62	28	20	19
Total Production						7	214	247	193	210	120	129	204
Cumulative Production						7	221	468	661	871	991	1120	1324

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—D

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	192
41	...	8- 8-07	310	310	310		270					190	•160	19
48	505	6-23-08	360	340	326	321				205		172	147	15
54	500	5-30-09	325		314	309		250		239		175	•150	16
56	(205)	9-24-09	313		295	297	250	260				190	118	11
141	390	6-11-10	308	310	310	308	280			200		185	160	15
142	410	7-22-10	333	320	335	320	303	285	247	235		192	170	16
161	375	8- 1-10	315		310	305	320	280		200		185	170	14
179	425	4-22-10	315	312	308			260		240		175	190	16
198	385	8- 3-10	322		307	305		265	(206)	200		170	155	15
209	505	12-17-10	470		303	303	260			210		180	175	15
211	510	3-28-10	381	340	300	300	250			172		140	110	14
212	525	12-28-06	360	349	336					218		200	D.O.	D.O
241	425	12-18-09	320		308	303		260		195		•200	180	14
246	420	3- 5-10			316	300			220	175		(90	D.O.	14
258	505	1- 8-11	340	345	347	329	220	310	257	247		210	200	18
1205	230	7-11-23												20
1307	200	9-13-23												17
1323	195	11-29-23												15
Rock Pressure Totals			3011	1651	3820	3700	1093	2170	724	2736		2564	2085	256
Number of Readings			9	5	12	12	4	8	3	13		14	13	17
Average Rock Pressure			335	330	318	308	273	271	241	210		183	161	15

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—D

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	8 265	8- 8-07	49	62	28	16	196	165	147	103	109	105	40
4	6 650	6-23-08	180	28	24	15	2	41	183	107	148	180	132
5	2 082	5-30-09	34	27	21	12	85	71	55	14	19	16	9
6	2 000	9-24-09	19	15	9	5	66	59	48	30	43	38	37
11	3 039	6-11-10	33	25	17	7	180	225	167	76	125	180	148
12	2 303	7-22-10	19	75	32	19	12	9	5	13	18	36	97
13	5 083	8- 1-10	52	110	47	53	3	55	248	186	250	307	260
17	1 224	4-22-10	44	25	20	16	70	74	60	4	65	56	14
18	2 753	8- 3-10	40	71	42	33	192	177	125	61	99	120	107
19	2 352	12-17-10	57	53	26	16	106	119	113	50	126	143	119
21	2 626	3-28-10	25	23	10	9	48	44	35	26	27	30	38
22	3 108	12-28-06	91	11	15	14	6	23	64	39	10	140	
24	2 357	12-18-09	33	24	11	7	102	89	88	53	31	21	32
26	2 190	3- 5-10	51	31	14	24	17	33	20	18	6	11	32
28	1 119	1- 8-11	12	19	26	17	31	13	6	6	7	32	23
35	789	7-11-23											7
37	969	9-13-23											5
33	1 008	11-29-23											
Total Production			739	599	342	263	1116	1210	1364	786	1083	1415	1100
Cumulative Production			739	1338	1680	1943	3059	4269	5633	6419	7502	8917	10017

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—E

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	192
229	410	10- 7-09			310				270			192	190	*18
234	450	11-17-09	363	350	347	315	320	300	275	270	230	210	190	18
244	460	1-15-10	355		331	333		290	270	250		220	185	14
288	380	10-25-10		320	310	306			268	240		210	200	*19
294	505	1- 9-11		330	331	275		285	255	214	189	180	145	9
329	400	7- 9-11	365	368	360	341		310	290	248		200	195	18
344	440	10-21-11	385	385	374	365		310	290	270		235	210	16
594	360	5-23-14		360	337	347	318			277	275	238		21
606	380	2-24-15			380	377	370	300	293	275	250	220	205	17
625	380	9-30-14			380	372	370	320	288	275	250	215	200	17
650	380	11-28-14			380	373		310	288	270	250	215	200	16
668	360	4-28-15			362	360		300	285	265		220	200	15
738	340	4-14-16				340	335		285	265		230	205	17
761	380	6-11-16				380		320	300	275	250	220	210	18
965	320	1- 6-18						320	293		250	230	205	18
966	365	9-21-17						330	292	272	250	235	200	18
1105	255	3- 2-20								270		250	220	19
Rock Pressure Totals			1468	1415	2914	2839	973	3375	3679	3936	1669	3298	3160	26
Number of Readings			4	4	8	8	3	11	13	15	7	15	16	1
Average Rock Pressure			367	354	364	355	324	307	283	262	238	220	198	16

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—E

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
	1 314	10- 7-09	21	5	10	23			5	3	4	1	4
	2 626	11-17-09	57	77	33	79	16	24	14	14	12	24	30
	3 399	1-15-10	56	171	182	174	39	42	28	20	31	14	27
	787	10-25-10	37	54	47	41	1	1	6	6	8	3	5
	787	1- 9-11	82	25	19	38	2	1	1	1	10	1	3
	3 214	7- 9-11	35	21	33	76	22	40	28	30	23	5	11
	4 152	10-21-11	69	33		3	28	24	18	14	20	18	18
	1 117	5-23-14		12	53	48	33	24	17	11	10	16	13
	2 694	2-24-15			7	3	56	55	57	51	31	59	45
	1 831	9-30-14			12	1	28	38	33	30	21	26	39
	3 108	11-28-14			14	2	36	42	33	30	19	34	27
	3 062	4-28-15			39	2	53	52	43	30	31	19	29
	2 797	4-14-16				3	46	51	40	31	30	25	25
	3 337	6-11-16				2	52	40	24	22	17	34	25
	1 554	1- 6-18						29	21	18	14	10	11
	3 422	9-21-17						74	29	24	24	24	18
	1 475	3- 2-20								8	30	31	32
Production			357	398	449	495	412	537	397	343	335	344	362
ative Production			357	755	1204	1699	2111	2648	3045	3388	3723	4067	4429

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—F

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
18		2-18-06	388		375	370	340	323			275	250	205	
19	500	3- 8-06	(370)		366	363	353	314	280	270	(271)	250	210	
20	520	5-16-06	391	390	(380)	384		339	313	295	285	240	235	
21	430	4- 3-06	395		378	360		321	293	274	270	250	210	
23	500	8-23-05	374	380	380	378		333	310	290	283	265	230	
24	520	11- 3-05	370		370	363		314	310	263	275	D.O.	215	
27	485	11-22-06	398	383	(383)	(384)		302	305	285	277	240	195	
35	505	1-27-07	380	362	(310)	366		300	307	282	265	260	240	
37	505	3- 9-07	370		374	367		318	300	280	271	250	210	
116	500	1-29-07	390		376	360		321	295	270	(271)	250	205	
117	500	7- 5-07	385		373	360	337	320	(250)	(268)	271	250	205	
236	405	2-25-10	397	400	(396)	(395)	365	(300)	308	300	285	255	220	
254	402	3-30-10	384	380	379	(380)		328	310	298	279	255	200	
507	425	5-15-13		412	395	(395)		306	288	280	263	(215)	195	
601	365	8- 5-14			374	(378)		316	307	282	271	250	210	
616	380	8-13-15			373	360	330	320	290	(268)	(270)	250	210	
656	395	1- 1-15			393	(393)	365	341	308	300	291	260	230	
963	345	11- 1-17						316	300	278	..	260	230	
1176	255	4-29-22											215	
1184	270	12- 4-21											220	
1188	260	2-23-22											210	
1219	250	4-16-21									266	225	205	
1319	240	5-11-23												
1336	248	7- 7-23												
Rock Pressure Totals			3508	1185	4906	4031	2090	5432	4824	4247	4127	4260	4705	44
Number of Readings			9	3	13	11	6	17	16	15	15	17	22	
Average Rock Pressure			390	395	377	366	348	320	302	283	275	251	214	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—F

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
7 182	2-18-06	113	126	109	84	102	99	79	109	26	83	86
10 526	3- 8-06	77	111	75	51	63	54	73	98	28	97	143
3 856	5-16-06	75	32	10	25	79	50	59	42	33	53	31
9 114	4- 3-06	128	112	100	83	94	104	86	104	20	108	121
8 326	8-23-05	35	21	7	10	25	16	26	25	17	33	21
11 000	11- 3-05	3	2	1	1	7	3	14	12	1	9	18
2 223	11-22-06	27	5	3	4	38	20	26	22	22	38	20
3 925	1-27-07	29	12	31	6	8	1	5	6	5	13	14
7 190	3- 9-07	86	72	34	61	63	55	72	44	30	66	51
7 473	1-29-07	66	63	66	44	38	41	31	34	6	29	34
5 000	7- 5-07	20	17	24	17	9	16	19	22	5	25	22
4 553	2-25-10	78	17	6	39	99	35	67	65	57	103	68
5 810	3-30-10	141	21	16	30	182	98	89	99	85	169	113
2 797	5-15-13		38	4	32	105	33	41	36	32	36	29
2 555	8- 5-14			6	11	56	40	46	38	26	46	49
4 152	8-13-15			28	54	66	52	58	63	12	62	58
5 359	1- 1-15			5	26	101	57	62	67	58	104	73
842	11- 1-17					5	26	25	20	20	36	33
2 675	4-29-22										28	65
2 200	12- 4-21										79	49
2 900	2-23-22										68	57
1 200	4-16-21									9	33	29
744	5-11-23											7
750	7- 7-23											10
Production		878	649	525	578	1140	800	878	906	492	1318	1201
ative Production		878	1527	2052	2630	3770	4570	5448	6354	6846	8164	9365

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
7	550	6-30-03	410	395	395	(393)	360	323	323	290	288	(240)	•235
10	505	11-22-04	400			390		340	332			280	•240
16	500	1905			385	387	(392)	348	336	305	291	275	248
17		1-21-06	407	390	383	395			335		284	265	•235
22	500	5-24-06	(400)	400	383	386		346	325	305	296	265	240
36		2-11-07	410	390	395	401		350	338	300	292	270	240
51	500	12-12-08	400	390	395	393	385	343	331	300	294	270	235
Rock Pressure Totals			2027	1965	2336	2352	745	2050	2320	1500	1745	1625	1673
Number of Readings			5	5	6	6	2	6	7	5	6	6	7
Average Rock Pressure			405	393	(389)	(392)	(373)	342	(331)	300	(291)	271	239

•Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—G

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
7	3 400	6-30-03	28	15	3	14	50	39	21	30	16	5	9
4	8 638	11-22-04	110	69	425	62	204	176	85	108	114	164	52
6	4 048	1905	210	128		7	31	13	9	17	6	18	13
7	3 300	1-21-06	29	16	2	21	127		20	16	27	67	56
2	8 428	5-24-06	68	38	55	38	116	83	73	73	79	116	70
6	2 650	2-11-07	17	11	2	17	52	36	22	21	17	17	18
5	3 607	12-12-08	29	16	3	27	59	51	35	42	23	50	17
Production			491	293	490	186	639	398	265	307	282	437	235
ulative Production			491	784	1274	1460	2099	2497	2762	3069	3351	3788	4023

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—H

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
459	480	1-17-13	479	430	395	355		305		280	(280)	240	210
460	500	3-24-13	(500)	460	382	(337)		340				275	175
533	455	7-22-13	455		360	343	312			285	278	240	210
559	485	10-10-13	485	455	383	335			(270)	(255)		270	190
568	410	12-5-13			400	385	385	348	315			285	250
569	410	9-24-14			390	385	367	341	315	310		268	235
570	470	12-1-13			390	370	345	330	317	300		265	240
583	460	3-20-14			357	310		265	(260)	(240)		250	155
596	450	2-7-14			486	430		360	340	322	(260)	310	250
614	420	6-9-14			481	405	400	398	378	340	335	300	290
690	340	10-14-15				(300)		(270)				(275)	195
745	495	1-17-16				497		445	370		(275)	(395)	325
760	480	5-2-16				386			300	280	(300)	260	220
805	375	7-15-16				373		325		280	(283)	245	200
819	435	10-26-16				435	405	405	381	350	342	310	290
1098		5-28-20								(394)	(400)		225
1198	320	11-1-20								320		275	255
1324	285	8-23-23											
1330	290	9-8-23											
1333	255	6-22-23											
1338	270	7-18-23											
1346	290	12-19-23											
Rock Pressure Totals			1419	1345	4024	5009	2214	3862	2716	3067	955	3793	3915
Number of Readings			3	3	10	13	6	11	8	10	3	14	17
Average Rock Pressure			473	448	402	385	369	351	340	307	(318)	271	(230)

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—H

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
49	4 452	1-17-13	95	76	83	44	42	44	34	24	10	21	17
60	4 552	3-24-13		41	39	51	28	27	30	22	65	65	105
63	3 161	7-22-13	91	73	93	48	23	40	35	17	28	54	46
59	5 252	10-10-13	19	81	124	54	29	41	41	24	69	80	134
64	992	12-5-13		153	85	67	59	28	61	76	124	183	75
69	1 117	9-24-14		7	129	67	50	35	47	102	119	166	119
50	2 702	12-1-13		77	105	73	33	29	59	109	120	246	213
65	5 252	3-20-14		139	151	86	32	32	10	18	48	98	176
76	840	2-7-14		14	28	66	59	44	49	40	45	66	104
84	1 989	6-9-14			151	223	188	292	194	216	81	93	97
90	368	10-14-15			17	35	13	16	29	22	37	54	98
86	970	1-17-16				25	36	42	147	39	116	101	154
88	1 225	5-2-16				3	22	27	28	19	15	28	22
85	492	7-15-16				3	32	45	31	21	17	28	28
89	550	10-26-16				4	72	47	36	45	44	48	46
96	550	5-28-20										30	67
94	1 400	11-1-20									170	108	62
93	524	8-23-23											23
91	326	9-8-23											6
95	1 947	6-22-23											118
92	789	7-18-23											15
96	1 300	12-19-23											
Annual Production			205	661	1005	849	718	789	831	794	1108	1469	1725
Cumulative Production			205	866	1871	2720	3438	4227	5058	5852	6960	8429	10154

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
169	485	8-11-10			393	373		315	265			*285	285
201	490	11- 9-10	403		364	353			265	250		255	235
203	490	11-16-10			(278)	(263)			260	245		*200	172
281	420	2-19-11	(340)		(300)	(286)			262	250		*185	160
445	410	Big Lime	355		(256)	(232)						155	135
608	320	5- 5-14		(320)		325		265	235	220		230	185
884	240	3- 2-15					(263)	(110)				150	140
891	400	5-28-17					(423)			250		225	205
1185	200	4-28-23											
1299	225	2- 1-23											
		Injun &	Keener										
Rock Pressure Totals			403		757	1051		580	1287	1215		1685	1517
Number of Readings			1		2	3		2	5	5		8	8
Average Rock Pressure			403		379	350		290	257	243		211	190

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—I

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
9	2 272	8-11-10	250	199	163	143	497	418	390	337	356	396	135
1	1 225	11-9-10	71	78	63	54	139	166	147	93	50	110	95
3	2 251	11-16-10	103	44	34	38	161	180	180	114	121	58	59
1	2 514	2-19-11	81	74	45	46	163	179	172	102	109	115	82
6	654	Big Lime	42	23	9	2	98	109	80	48	55	67	50
8	431	5-5-14		7	46	31	53	71	72	50	57	58	43
4	2 166	3-2-15					23	76	61	49	83	146	122
1	1 117	5-28-17					57	122	140	130	130	162	128
5	918	4-28-23											59
9	1 494	2-1-23											151
		Injun & Keener											
Production			547	425	360	314	1191	1321	1242	923	961	1112	924
lative Production			547	972	1332	1646	2837	4158	5400	6323	7284	8396	9320

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—J

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
844	500	11-26-1(				500		455	425	365	350	300	260	2
955	495	7-25-17					523	480	440	368	338	290	255	2
956	525						518	484	439	385	353	320	280	2
957	510	10-6-17						480	450	395	377	340	300	2
958	510	12-20-17						480	435	380	358	300	270	2
984	510	9-12-17					518	480	440	380	355	300	300	2
994	500	2-27-18						480	440	395	370	330	300	2
1007	510	10-19-17						481	431	378	338	285	250	2
1008	500	1-7-18						480	450	398	382	330	300	2
1009	510	12-21-17						486	450	390	370	310	280	2
1015	510	11-28-17						490	455	395	382	320	290	2
1016	490	3-27-18						482	438	398	363	230	290	2
1132	405	5-22-20								417		320	285	2
1161	395	10-30-20 (Inj & Keener								395	378	333	300	2
1162	340	(1-5-21									343	295	260	2
1163	395	(3-3-21 (Inj & Keener									363	315	280	2
Rock Pressure Totals							1559	5758	5923	5439	5420	5018	4500	40
Number of Readings							3	12	12	14	15	16	16	
Average Rock Pressure							520	480	441	389	361	314	281	2

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—J

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
[illegible]	9 644	11-26-16					124	44	37	48	29	40	38
[illegible]	6 358	7-25-17					64	86	59	80	82	88	74
[illegible]	3 706						39	74	69	103	66	94	109
[illegible]	2 357	10- 6-17					73	51	80	119	78	101	128
[illegible]	4 152	12-20-17					10	94	67	89	62	91	98
[illegible]	3 270	9-12-17					37	61	64	94	57	85	99
[illegible]	2 500	2-27-18						30	72	115	78	93	108
[illegible]	5 857	10-19-17					76	104	48	83	80	100	84
[illegible]	2 626	1- 7-18						73	77	92	65	97	125
[illegible]	4 553	12-21-17					3	74	72	105	69	94	122
[illegible]	7 230	11-28-17					11	23	56	77	53	76	85
[illegible]	2 356	3-27-18						26	49	83	65	128	96
[illegible]	2 166	5-22-20								24	189	163	139
[illegible]	1 053	10-30-20								19	188	216	135
[illegible]	K. 525	1- 5-21									106	114	64
	L. 722 Injun &	Keener											
[illegible]	790 Injun &	3- 3-21 Keener									91	115	72
[illegible] Production							437	740	750	1131	1358	1695	1576
[illegible]ulative Production							437	1177	1927	3058	4416	6111	7687

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—K

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
5	500	1901	462	442	440	439		382	367	330	316	275	270	
30	500		474	(457)	(450)	439	(380)	381	345	325	313	275	255	
50	500	10- 5-08	(437)	440	439	425	(349)	345	331	300	295	270	242	
200	475	11-19-10	445	442	440	430		365	346	325	317	282	257	
245	540		464		466	435		380	371	340	323	285	270	
260	480	4- 1-11	475	475	470	450		(360)	360	325	325	292	253	
490	430	5-27-13		465	450	430	401	380	365	345	320	280	255	
491	405	4-30-13		460	442	420	391	380	365	340	320	(240)	220	
492	435	Keener 4-14-13	(460)	(460)	(450)	(425)	(410)	(386)	(363)	(341)	(325)	(285)	270	
493	430	4-14-13	458	453	445	435		370	345	337	312	292	230	
574	450	2- 2-14		470	445	420	390	375	360	345	318	290	265	
1322	270	6-11-23												
1334	250	8- 3-23												
1339	287	10-26-23												
1340	275	9- 6-23												
Rock Pressure Totals			2778	3647	4037	4321	1182	3358	3555	3312	3159	2541	2787	3
Number of Readings			6	8	9	10	3	9	10	10	10	9	11	
Average Rock Pressure			463	456	449	432	(394)	373	356	331	(316)	282	253	

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD—CLENDENIN SAND—INJUN AREA—K

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
5 500	1901	8	4	2	16	86	51	36	46	27	53	47
7 708		24			23	40	54	122	110	73	153	126
4 553	10 5 08	30	24	11	41	99	100	46	61	56	95	86
2 626	11 19 10	36	24	10	31	108	102	57	63	48	99	77
		46	18	3	27	88	66	37	58	41	58	73
5 252	4 1 11	74	40	11	53	173	126	92	99	114	153	76
1 416	5 27 13		50	62	44	50	20	15	24	10	11	8
681	4 30 13		48	66	75	53	39	20	33	28	27	37
	Keener											
1 577	4 14 13		98	127	125	94	69	43	68	73	91	109
681	4 14 13	4	31	1	3	83	45	32	32	41	58	49
7 417	2 2 14		142	185	199	160	94	77	120	131	171	269
1 770	6 11 23											17
1 938	8 3 23											20
339	10 26 23											13
994	9 6 23											17
Production		222	479	478	637	1034	766	577	714	642	949	1024
tive Production		222	701	1179	1816	2850	3616	4193	4907	5549	6498	7522

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
9	505	8-17-04	425	425	425	395		330	320	295	268	245	220	
49	480	5-19-10	485	455	430	385		375	345	325	300	275	237	
468	415	3- 6-13	430	430	421	410		340	320	300	282	248	218	
474	490	6- 6-13		460	420	380		355	345	325	293	263	237	
475	450	8- 1-13		460	430	385		355	340	325	292	270	243	
558	460	10-18-13		460	432	395		355	345	325	295	272	247	
567	425	11-24-13		475	445	410	385	370	362	345	315	290	265	
575	475	1-31-14			445	420	397	390	375	350	328	300	277	
576	445	12- 1-15				420		393	385	360	335	300	282	
1111	325	11-21-19									295	253	225	
1282	400	1- 5-23												
1306	260	1-23-23												
Rock Pressure Totals			485	2740	3448	3600	782	3263	3137	2950	3003	2716	2451	
Number of Readings			1	6	8	9	2	9	9	9	10	10	10	
Average Rock Pressure			485	457	431	400	391	363	349	328	300	272	245	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—L

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
11 196	8-17-04	179	59	36	55	204	82	92	114	102	172	127
3 520	5-19-10	106	101	106	119	77	32	26	41	46	125	100
2 753	3-6-13	19	34	12	35	49	34	51	80	66	70	89
6 923	6-6-13		122	206	152	108	40	72	88	99	123	188
3 449	8-1-13		114	144	182	135	68	58	90	106	137	215
3 423	10-18-13		180	217	220	160	101	74	109	128	167	259
3 621	11-24-13		145	184	172	117	87	79	93	115	151	195
2 144	1-31-14		78	173	183	145	77	89	124	124	164	262
1 244	12-1-15			33	205	148	98	99	114	124	168	278
685	12-21-19								22	19	29	25
895	1-5-23											120
1 770	1-23-23											47
Production		304	833	1111	1323	1143	619	640	875	929	1306	1905
ative Production		304	1137	2248	3571	4714	5333	5973	6848	7777	9083	10988

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN & SQUAW AREA—M

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
1233	505	7-29-21	Inj. & Squaw								505	365	310	
1234	480	8-11-21	Inj. & Squaw								480	340	275	
1235	440	10-15-21	Inj.								440	395	340	
1236	490	10-1-21	Squaw								490	357	295	
1237	480	12-22-21	Squaw										355	
1238	465	1-5-22	Inj. & Squaw										350	
1280	410	10-8-22											275	
1281	410	4-9-23	Inj. & Squaw											
Rock Pressure Totals											1915	1457	2200	
Number of Readings											4	4	7	
Average Rock Pressure											479	364	314	

ANNUAL PRODUCTION

(Millions Cubic Feet)

D—CLENDENIN SAND—INJUN & SQUAW AREA—M

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
3 480	7-29-21									27	135	143
1 900	8-11-21									38	146	104
284	10-15-21									28	114	79
4 553	10-1-21									33	120	135
1 675	12-22-21										111	107
798	1-5-22										126	107
1 186	10-8-22										13	76
1 380	4-9-23											43
duction										126	765	794
ve Production										126	891	1685

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—M

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
859	510	1-15-17					525	500	485	480	470	*440	420
885	510	4-10-17					510	505	490	490	480	*460	450
		Injun and Big Lime											
1075	500	10-31-19							(500)	(528)	(531)		430
1328	430	12- 7-23											
Rock Pressure Totals							1035	1005	975	970	950	900	1300
Number of Readings							2	2	2	2	2	2	3
Average Rock Pressure							518	503	488	485	475	450	433

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—MM

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
	2 500	1-15-17					103	80	109	84	65	96	165
	700	4-10-17					51	57	75	62	49	58	107
		Injun & Big Lime											
	361	10-31-19										13	54
	560	12-7-23											
Production							154	137	184	146	114	167	326
lative Production							154	291	475	621	735	902	1228

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—N

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
155	525	8-15-10	520	520	(505)	505		430	410	395	385	335	315	
172	490	10- 5-10	525	(505)	505	500		390	345	337	(370)	300	285	
217	510	11-15-09	(508)	485	460	453	415	389	372	350	258	270	275	
218	545	10-18-09	530	525	515	515		450	420	415	390	355	330	
238		12- 4-09	518	495	493	478		400	375	340	320	285	258	
261	400	2-18-11	525	525	515	(515)		(440)	440	420	405	367	345	
262	520	3-21-11	530	525	515	505		430	410	395	380	(305)	285	
557	445	10-31-13		500	492	475	450	(394)	400	390	342	340	307	
578	490	2-28-14			520	493	460	445	425	415	395	355	330	
638	500	11- 8-14			488	482	450	407	390	350	335	310	260	
657	485	11-24-14			498	495	448	430	415	400	390	320	300	
659	495	1-21-15			520	515		(392)	390	365	359	325	275	
669	495	3-23-15			(499)	493		414	390	345	327	305	275	
672	500	8-14-15				513		437	417	390	375	335	300	
673	500	5-27-15												
		Inj & Kreener			(517)	515		427	410	360	(360)	315	275	
747	480	4- 6-16					450	440	410	380	368	340	320	
756	525	3- 7-16				(524)	514	484	482		435	405	375	
1042	425	3-23-19							435	400	370	320	300	
1058	430	7- 7-19							430	425	390	360	340	
1212	375	6- 1-23												
1308	305	3-19-23												
		Salt												
1309	360	3- 4-23												
1326	275	10-14-23												
1352	385	11- 5-23												
Rock Pressure Totals			2630	2595	5521	6937	3187	5973	7766	6872	6224	5942	5750	62
Number of Readings			5	5	11	14	7	14	19	18	17	18	19	
Average Rock Pressure			526	519	502	496	(455)	427	409	382	(366)	330	303	2

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—N

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
3 547	8-15-10	12	15	9	7	171	94	110	90	67	86	133
4 038	10-5-10	23	11	10	17	161	116	96	67	45	101	88
431	11-15-09			2	8	13	79	17	16	18	17	9
1 800	10-18-09	12	5	3	23	95	44	48	37	28	44	41
1 389	12-4-09			6	19	130	62	58	67	63	88	41
1 784	2-18-11	11	6	4		154	72	63	47	41	52	76
4 917	3-21-11	15	7	7	13	137	69	83	74	51	89	101
188	10-31-13		36	39	37	40	18	17	24	20	26	35
1 724	2-28-14		62	176	172	144	72	59	61	61	100	132
740	11-8-14			3	4	86	65	31	53	49	64	40
2 616	11-24-14			6	26	148	82	87	95	60	104	131
1 577	1-21-15			6	11	140	87	82	50	45	56	70
451	3-23-15				12	78	45	28	39	35	53	19
2 382	8-14-15				12	13	72	86	89	77	104	60
1 952	5-27-15				21	96	55	43	64	55	71	49
	(Inj & Keener)											
550	4-6-16					91	65	50	56	48	70	37
554	3-7-16					28	50	50	67	45	82	50
1 400	3-23-19							28	49	46	83	95
1 119	7-7-19							5	19	8	20	25
513	6-1-23											19
302	3-19-23	(Salt)										7
1 187	3-4-23											77
116	10-14-23											2
1 185	11-5-23											
Production		73	142	271	382	1725	1147	1041	1064	862	1310	1337
ative Production		73	215	486	868	2593	3740	4781	5845	6707	8017	9354

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—O (Sheet No. 1)

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
6	380	3-30-03		407	414	397		307	300	277		227	190
32	500	1-11-06	410	420	418	404		310	304	292	266	260	205
40	420K	5-4-07											
	5001	9-27-12	460	405	420	403		308	301	285		230	192
114	525	10-16-12		405	414	399	330	308	307	272		224	185
115	525	1909	404	390	393	375	335	308	300	280		222	195
154	490	11-27-11	395	398	395	400	366	310	317	297		230	220
164	475	12-30-10		405	408	398		308	293	273		215	180
202	500	11-1-10	405	408	419	405	365	303	298	278	237	230	203
227	510	12-14-09	427	426	424	415	380	315	304	285	250	230	205
231	480	2-15-10	425		422	396		305	306	273		210	180
233	490	2-28-10			386		350	308	309	275	249	221	182
335	460	7-15-11	402	405	425	400	355	304	300	285		222	200
604	450	8-11-14			440	434	405	323	310	290	248	185	156
612	420	8-23-14			427	399	327	306	308	273		210	180
637	445	10-15-14			435	429		333	338	290	260	255	215
665	440				437	419	404	326	313		252	224	190
676	415	6-6-15			420	400		313	304	273		220	182
693	430	8-17-15			428	417	365	326	310	280	252	222	200
716	425	9-26-15			430	395	335	310	309	277		221	190
721	425	11-15-15				403	356	318	310	285	240	180	200
725	440	1-7-16				420	358	316	319	275	257	225	197
807	425	7-28-16				419		310	300		257	248	205
808	420	1-10-17					385	333	325	297	255	255	215
809	385	10-26-16				385	345	325	304	282	250	230	195
856	375	12-4-16					309	300	300	273		212	180
857	385	1-20-17					360	312	308	282		220	182
858	300	12-20-16					300	286	251	247	208	160	180
898	460	5-7-17						311	294	280		220	205
951	362	6-21-17					354	300	292	273		225	185
983	345	8-9-17					345		301	273		220	183
1006	337	10-3-17					337	300	301	278		227	189
1109	300	4-13-20								295		230	205
1110	270	2-27-20								270		230	175
1242	260	2-7-22											195

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD—CLENDENIN SAND—INJUN AREA—O (Sheet No. 1)

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
8 618	3-30-03	151	38	12	56	74	52	65	58	51	81	45
11 145	1-11-06	65	37	70	79	146	150	80	98	100	158	126
8 495	9-27-12	136	32	16	49	48	18	18	39	46	53	32
9 293	10-16-12	235	54	27	88	86	103	87	41	48	64	44
6 000	1909	23	19	30	50	69	49	64	34	42	36	30
3 297	11-27-11	86	10	3	29	59	51	37	37	36	34	31
9 293	12-30-10	218	55	28	84	102	53	50	60	65	76	33
12 500	11-1-10	105	16	9	59	41	44	31	45	40	38	25
4 666	12-14-09	21	29	4		56	51	42	42	24	25	22
12 449	2-15-10	102	32	19	74	53	37	34	30	35	48	34
20 113	2-26-10	468	324	65	550	77	105	58	61	51	55	31
4 152	7-15-11	30		27	80	97	53	42	46	62	20	20
1 770	8-11-14			3	4	77	30	24	19	34	11	14
12 280	8-22-14		87	28	130	72	59	63	78	60	80	54
659	10-15-14			34		40	23	26	28	24	30	25
4 553				146	65	102	47	37	50	46	53	40
1 592	6-6-15			16	26	41	36	26	32	21	32	16
2 602	8-17-15				19	73	35	30	43	26	38	25
11 272	9-26-15			19	124	90	71	53	65	73	70	63
3 611	11-15-15				11	10	6	2	2	1	4	8
5 250	1-7-16				25	78	53	45	32	25	50	16
5 783	7-28-16				10	126	84	69	65	53	55	44
829	1-10-17					35	41	40	50	26	32	21
3 750	10-26-16				9	42	39	27	40	25	31	23
10 982	12-4-16					61	31	39	31	26	39	27
5 857	1-20-17					55	57	41	54	22	26	30
223	12-20-16					(4)						
5 252	5-7-17					12	36	27	34	37	38	17
3 706	6-21-17					14	55	25	34	43	42	28
4 553	8-9-17					23	55	50	46	63	74	45
5 253	10-3-17					19	88	49	57	63	70	43
884	4-13-20								34	43	40	27
3 960	2-27-20								24	27	25	17
1 800	2-7-22										43	43

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—O (Sheet No. 2

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1247	216	3-20-22											183
1283	215	11-12-22											191
1287	195	12-9-22											167
1310	190	2-23-23											
1335	215	9-22-23											
1347	210	7-22-23											
Rock Pressure Totals			460	420	6286	8483	7157	6602	8847	8418	3273	6410	710
Number of Readings			1	1	15	21	20	21	29	30	13	29	37
Average Rock Pressure			460	420	419	404	358	314	305	281	252	221	192

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—O (Sheet No. 2)

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
26	1 770	3 20 22										18	31
29	4 818	11 12 22										9	44
25	4 818	12 9 22										5	31
10	2 166	2 23 23											26
15	1 361	9 22 23											19
26	3 536	7 22 23											8
Production			1640	683	556	1571	1878	1612	1281	1409	1338	1603	1258
ulative Production			1640	2323	2879	4450	6328	7940	9221	10630	11968	13571	14829

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—P (Sheet No. 1)

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
1	500	1899	416	447		416	298	318	353	300	306	260	225	2
2		Abd. 6-1907												
3	500	3- 7-01	460	463	455	449		365	377	330	350	310	290	2
4	500	1902	431	430	415	414		320	353	315	313	287	255	2
11	505	5- 5-05	429	437	425	415		373	340	315	321	285	255	2
12	498	10-11-05	421	415	407	405	380	370	343	320	302	285	245	2
13	480	11-11-05	431	427	415	405		360	350	300	280	262	235	2
15	510	4-15-06	434	435	420	411		362	363	320	318	265	265	2
34	500	12-15-06	428	410	419	419		369	344	315	315	265	260	2
38		3-17-07		390	408	421		365	340	310		262	235	2
47			450	440	436	423		353			302	270	250	2
52	505	1-31-09	441	440	430	422	390	370	350	305	297	272	235	2
119	510	3- 2-09	475	460	440	440		368	340	320	310	280	230	2
120	350	8-28-09	410	415	407	384				300	308	270	265	2
137	505	3-30-10	440	430	424		333	370	350	305	297	275	235	2
153	510	7- 8-10		395	400	406		340	325	300		255	215	2
162	440	7-23-10	432	428	416	412	350	360	348	290	287	260	235	2
163	470	2- 3-11	432	427	414	410		360	340	285	287	260	230	2
214	510	2- 7-09	446	437	449	439		366		330	326	270	230	2
219	490	11-12-09	456	447	431	425		398	360	325	320	290	210	2
220	410	12-25-09	490	450	440	428		371	350	325	310	220	172	1
228	485		481	467	458	453		360	337		297	255	200	1
259	465	2- 4-11	424	425	413	405		360	348	300	290	272	235	1
264	500	12-24-10	478	467	452	445		383	344	300	270	264	265	1
328	Abd. 7	22-11												
448	370	12-21-12	428	415	395	397	375	368	358	310	310	280	275	2
581	440	1-12-14		458	438	436		386	353	300	276	245	230	1
582	420	11-24-13	410	414	403	388	360			315	310	280	264	2
589	370	11- 8-13		410	395	397		360	334	315	303	280	245	2
603	470				460	452		363	337		300	215	195	2
624	440	9-21-14		440	389	377		330	310	290		250	225	1
677	420	6-17-15			422	410		359		300	301	265	255	2
737	420	12-11-15				425		363		300	306	265	245	2
848	400	12- 9-16						357		295	298	260	247	2

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—P (Sheet No. 1)

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	2 365	1899	6	6		3	30	3	6	8	4	5	4
2		Abd. 6 1907											
3	4 553	3 7 01	16	8	5	5	44	23	21	21	7	9	11
4	5 500	1902	26	161	5	6	58	40	26	24	8	8	11
5	6 864	5 5 05	45	31	10	9	149	91	59	53	21	32	27
6	4 187	10 11 05	46	45	18	14	100	57	48	50	34	66	47
7	7 250	11 11 05	64	19	4	2	81	61	35	23	13	6	7
8	1 525	4 15 06	11	5	11	5	42	26	19	16	7	10	10
9	1 563	12 15 06	26	13	2	11	55	35	21	32	21	27	20
10	7 470	3 17 07	73	7		28	158	129	82	106	112	118	89
11	1 750		45	18	9	47	53	63	53	42	32	51	50
12	4 123	1 31 09	21	15	5	21	80	62	36	31	19	25	19
13	3 800	3 2 09	15	1	23	4	54	37	28	24	10	16	10
14	4 000	8 28 09	206		6	44	62	79	62	44	35	62	46
15	5 550	3 30 10	38	31	10	24	136	93	69	58	34	53	39
16	1 380	7 8 10	73	58	2	13	40	31	25	25	29	27	22
17	4 039	7 23 10	25	24	5	21	102	55	30	28	24	18	18
18	3 214	2 3 11	21	26	5	16	79	44	26	25	15	16	14
24	431	2 7 09	26	3	8	5	66	54	46	40	23	39	36
25	4 553	11 12 09	14	20	7	15	63	37	25	19	21	20	9
3	480	1 25 09			1	3	17	9	9	6	4	5	4
27			8	17	6	15	68	25	28	19	14	25	36
28	6 357	2 4 11	85	23	5	7	127	93	45	42	19	24	20
34	14 962	12 24 10	139	63	20	94	313	22	96	147	96	169	118
37		Abd. 7 22 11											
46	1 040	12 21 12	4	10	3	18	49	38	18	15	13	17	12
47	8 868	1 12 14			12	56	216	77	68	116	72	117	81
48	5 783	11 24 13				1	60	77	58	61	38	72	47
49	4 758	11 8 13		34	29	24	137	90	65	64	66	90	81
50	1 889				3	9	48	18	18	17	9	14	9
51	1 456	9 21 14		12	7	57	43	46	35	28	30	20	25
52	2 251	6 17 15			5	28	78	95	57	50	32	52	51
53	2 133	12 11 15				3	50	58	31	30	38	68	52
54	5 956	12 9 16					110	97	97	75	43	100	79

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—P (Sheet No. 2

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
850		5- 7-17						360		295	(296)	265	246
962	365	8-17-17					365	347	333	295		250	220
1017	360	12-20-17						360	348	300	290	262	230
1112	290	6-25-21									290	268	240
1173	340	9-20-20								340	315	290	255
1207	265	7-15-23											
1231	290	9-15-21									290	280	240
1269	290	7- 4-22											252
1270	402	7- 9-22											345
1272	250	7-22-22											
1289	245	10-20-22											220
1290	270	11-19-22											258
1300	225	2- 6-23											
1315	285	5-24-23											
1343	225	8- 4-23											
1349	260	9- 1-23											
Rock Pressure Totals			7104	8283	9781	9513	1870	11276	8596	10165	4102	9619	10159
Number of Readings			16	19	23	33	5	31	25	33	14	36	42
Average Rock Pressure			444	436	425	414	374	364	344	308	293	267	242

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—P (Sheet No. 2)

Well No.	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1	5 572	5- 7 17					81	126	104	88	58	107	82
2	1 109	8 17 17					15	40	24	34	40	36	23
3	4 553	12 20 17						85	20	37	20	28	24
4	1 186	6 25 21									15	55	26
5	580	9 20 20								7	34	50	39
6	1 400	7 15 23											7
7	339	9-15 21									4	25	12
8	600	7- 4 22										10	31
9	1 243	7- 9 23										4	11
10	735	7 22 22										9	12
11	1 628	10 20 22										17	66
12	3 000	11 19 22										8	72
13	1 069	2- 6 23											14
14	2 236	5 24 23											10
15	1 938	8- 4 23											7
16	285	9- 1 23											10
Annual Production			1033	650	226	608	2864	2016	1490	1505	1114	1730	1550
Cumulative Production			1033	1683	1909	2517	5381	7397	8887	10392	11506	13236	14786

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—Q

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
287	375	9 18 10	422	397	365			340		297	(295)	265	250	2
307	500	1 26 11	393	(317)	355			340		300	(303)	270	249	2
309	450	2 4 11	421	(350)	380			350		310	(312)	270	264	2
311	440	3 6 11	405	(313)	345			325		285	271	250	235	2
348	450	10 7 11	369	(326)	327			310		270	266	230	220	2
352	445	10 17 11	370	(323)	331			305		275	245	(175)	185	2
421	385	4 3 12	(376)	354	335			310		273	265	245	232	2
Rock Pressure Totals			2380	751	2438			2280		2010	1047	1530	1635	15
Number of Readings			6	2	7			7		7	4	6	7	
Average Rock Pressure			397	376	(348)			326		287	(262)	255	234	2

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—Q

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
2 500	9-18-10	54	15	14		26	25	31	34	20	38	23
1 420	1-26-11	54	15	23	20	11	18	17	14	10	19	17
3 706	2-4-11	80	55	68	145	43	99	68	53	40	77	53
1 946	3-6-11	165	97	46	59	16	24	27	27	11	24	16
1 946	10-7-11	53	68	49	36	6	20	32	19	18	28	25
1 704	10-17-11	94	15	23	33	25	15	16	11	6	14	7
1 591	4-3-12		70	27	33	2	12	12	12	6	17	19
Production		500	335	250	326	129	213	203	170	111	217	160
ative Production		500	835	1085	1411	1540	1753	1956	2126	2237	2454	2614

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—R

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	
239	410	11- 8-09	460	435	445	445		375		350	350	300	220	
243		12- 3-09	458	448	465	465		385		360	341	275	250	
269	420	2-27-11	444	440	425	434	365	343		340	321	275	225	
292		10-24-10	322	235	167	145	157	225	225	223	227	210	190	
564	485	11- 3-13		495	480	470	400	428	394	340	331	290	265	
605	470	8-31-14			463	456	410	415	365	330	320	288	270	
640	410	10-22-14				474	435	400	355	327	343	295	240	
		Inj B L												
743	425	2- 3-16				435	420	380		320	318	270	235	
751	475	2-23-16				486	460			350	370	315	300	
757	460	4- 7-16				478	443	410	395	332	346	300	280	
997	400	10- 6-17					470	400		355	366	325	305	
1196	350	5- 3-21												
1220	340	4- 8-21											269	
1223	400	8-23-21									400	338	350	
1313	295	2- 5-23												
1331	225	7- 8-23												
Rock Pressure Totals			1362		943	3222	1758	3193	1509	3077	1428	2721	3399	3
Number of Readings			3		2	7	4	8	4	9	4	9	13	
Average Rock Pressure			454		472	460	440	399	377	342	357	302	261	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—R

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1 360	11- 8-09	52	4	2	2	68	61	48	35	47	63	79
1 108	12- 3-09	56	7	3	3	48	45	30	26	26	30	45
877	2-27-11	60	1	1	1	9	18	13	7	16	33	23
4 917	10-24-10	2	5	13						2	27	38
275	11- 3-13			5	17	44	20	23	43	18	43	15
2 339	8-31-14			9		210	91	93	143	113	186	150
1 243	10-22-14				5	112	154	82	80	33	52	46
	Inj & B.L.											
1 861	2- 3-16				42	87	86	78	51	35	66	54
1 008	2-23-16				4	85	90	70	54	39	71	82
3 706	4- 7-16				6	123	112	92	71	48	98	95
800	10- 6-17						54	48	35	32	47	40
7 097	5- 3-23											21
1 300	4- 8-21										23	51
300	8-23-21									1	41	17
962	2- 5-23											55
2 140	7- 8-23											10
Production		170	17	33	80	786	731	577	545	410	780	821
ative Production		170	187	220	300	1086	1817	2394	2939	3349	4129	4950

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—S

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1
210	(380)	11 21 06	450	448	435	431		355	313	285	243	228	190	
237	495	12 4 09	467	445	441	432		363	309	283	254	240	205	
240	465	12 16 09	457	420	405	389		313	280	310	290	275	275	
		(10 15 12)												
270	400	4 7 11		274	187	208	280	234	245	218	265	208	200	
402	505	3 16 12				431	430	430	427	413	400	380	265	
566	450	11 10 13		450	441	429		328	313	275	238	221	190	
639	450	10 24 14			438	432	340	348	304	275	238	220	195	
660	455	2 17 15			465	457		345	346	310	295	265	235	
694	415	12 8 15				426		365		325	303	253	250	
695	400	2 4 16				400	405		360	325	310	240	250	
713	440	10 1 15			440	440		360		322	293	240	255	
			Keener & Injun											
845	405	12 5 16						353	306	277	235	220	192	
874	395	4 2 17					395	372	300	290	252	240	210	
875	370	2 20 17					370	362	306	278	243	230	200	
881	330	10 28 17						339	304	279	241	220	180	
882	330	6 2 17					330	321	304	275	240	215	200	
883	380	4 4 17					350	353	313	285	244	228	190	
1271	285	9 28 22											190	
1301	225	12 18 22											205	
1312	210	4 3 23												
Rock Pressure Totals			917	1763	3865	3436	1805	4364	3072	4069	3699	3055	4077	3
Number of Readings			2	4	7	8	5	13	10	14	14	13	19	
Average Rock Pressure			459	441	438	430	361	351	307	291	258	235	215	

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—S

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1 947	11-21-06	220	45	18	40	151	110	65	92	60	88	38
4 818	12-4-09	181	44	12	87	154	101	52	63	46	88	46
1 299	12-16-09		2	1	1	16	9	27	16	21	48	41
3 706	4-7-11		1	19						4	21	31
2 087	3-16-12										34	77
5 572	11-10-13		14	4	26	79	52	20	26	20	26	13
7 365	10-24-14			11	37	84	50	33	47	40	43	31
2 616	2-17-15			3	7	58	65	27	33	30	37	25
2 753	12-8-15				3	62	50	38	16	34	40	39
1 040	2-4-16				2	33	36	29	20	26	32	32
721	10-1-15	Keener & Inj.			7	47	40	32	22	27	29	29
10 413	12-5-16				3	102	52	44	49	37	48	31
2 000	4-2-17					53	45	57	42	30	42	33
3 350	2-20-17					50	44	27	33	20	27	21
8 000	10-28-17					18	56	34	51	32	65	41
2 000	6-2-17					16	31	26	35	17	34	22
5 597	4-4-17					103	90	61	90	46	93	49
7 194	9-28-22										26	44
1 770	12-18-22											54
2 166	4-3-23											25
Production		401	106	68	213	1026	831	572	635	490	821	722
ative Production		401	507	575	788	1814	2645	3217	3852	4342	5163	5885

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—T Sheet No. 1

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
279	530	6-28-10	526	530	523	518	480	465		390	425	365	360
282	525	1-24-10	492	502	503	499			420			375	345
296	460	5-22-12	470	460	457	419		410	398	380	425	325	255
		8-8-10											
297		8-9-10	498	499	501	503		475		410	329	320	250
308	440	2-6-11	536	531	503	483		400	378	340	400	300	295
310	400	2-2-11	411	460	466	442	390	400		310	351	295	210
362		1-26-11	475	475	451	388					388	332	290
378	500	4-19-15	543	543	535	530		450		400	432	375	345
386	465	4-3-12	429	403	349	325	330		405		324	295	265
399	420	5-8-12	424	379	336	309	Abd.	1-23	1919				
471		11-18-12	450	410	359	335	335	345	320	305	424	310	275
482	500	10-9-15				515					430	400	390
504	440	4-19-13			526	519	510	470	415	385	405	365	360
527	445	3-13-13	501	497	496	492		440		400	409	365	350
598	480	5-23-14		489	452	386		335	305	285	350	275	205
615	465	6-3-14		483	491	490		478	390	350	418	280	320
641	508	10-14-14			491	486	425			330	400	300	245
642	495	11-16-14				475		440		370	346	235	265
701	505	8-20-15				501		475	400	375	427	380	350
897	460	3-25-17					511	500			425	415	395
904	490	2-26-17					489	471	455	427	418		325
932	435	6-7-17					505	525	440	390	418	345	334
1045	480	11-28-18							498	395	419	320	272
1100	400	8-7-20								412	411	230	190
1101	400	4-28-20								424	475	295	250
1152	340	1-5-21	Inj. & Keener								343	295	275
1170	480	7-7-20									500	350	285
1172	415	1-20-21									436	265	265
1178	395	3-17-21									395	325	265
1221	400	3-3-21									400		340
1222	450	3-19-21									460	380	290
1224	400	6-20-21	Big Lime								400	250	195
1225	405	9-22-21									415	320	265

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD CLENDENIN SAND INJUN AREA T (Sheet No. 1)

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
999	6 28 10	13	1	3	2	34	47	35	35	15	45	61
100	1 24 10	8	1	2	3	20	13	15	20	26	35	32
201	5 22 12											
	8 8 10	35	...	2	6	12	7	11	8	6	14	16
284	8 9 10	13	1		1	15	15	12	10	8	16	19
1 225	2 6 11	60	1	3	1	45	61	51	50	34	50	47
600	2 2 11					18	33	27	35	16	30	31
1 375	1 26 11			7	13	6	4	9	7	35	74	80
405	4 19 13			5	3	141	133	96	156	55	106	107
1 404	4 3 12	25	10	10	11	9	12	19	14	43	18	27
1 531	5 8 12	56	20	17	24	34	1	Abd.	1 23	19		
1 759	11 18 12	33	13	32	15	18	41	32	40	23	43	44
910	10 9 15				1	42	42	39	43	38	97	97
431	4 19 13					6	19	18	15	14	39	32
1 666	3 13 13		8	6	2	179	200	143	120	117	201	137
431	5 23 14				13	14	17	16	10	7	16	12
500	6 3 14			2	1	2	16	34	26	19	36	25
527	10 14 14			1	1	26	25	31	26	17	24	19
1 054	11 16 14				1	58	53	25	19	13	22	32
2 626	8 20 15				5	61	58	61	51	37	62	72
554	3 25 17					7	55	57	48	35	67	72
393	2 26 17										17	31
1 667	6 7 17							82	85	50	108	91
3 500	11 28 18							6	15	50	81	59
1 488	8 7 20								4	9	32	11
2 000	4 28 20								4	35	56	39
K 525	Inj & Keener											
1 722	1 5 21									106	62	39
1 784	7 7 20									10	66	35
500	1 20 21									10	48	24
1 471	3 17 21									26	102	48
400	3 3 21										18	42
1 150	3 19 21									12	111	63
2 400	6 20 21	(Big	Lime)							15	25	21
2 900	9 22 21									14	83	54

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—T Sheet No.

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1228	335	5-16-21	(Inj. & B. L.)								335	280	240
1318	430	6-26-23											
1348	375	11-30-23											
1354	300	9-20-23											
Rock Pressure Totals			3774	3685	3616	4625	2261	5260	4369	6061	4559	9047	9561
Number of Readings			8	8	8	10	5	12	11	16	12	28	33
Average Rock Pressure			472	461	452	463	452	438	397	379	380	323	290

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—T Sheet No 2

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
L	200	Inj. & B. L.											
Inj.	1.043	5-16-21									13	45	39
	304	6-26-23											7
	116	11-30-23											2
	075	9-20-23	(Inj. & B. L.)										1
Production			243	55	90	103	747	852	819	841	908	1849	1568
ative Production			243	298	388	491	1238	2090	2909	3750	4658	6507	8075

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—INJUN AREA—W

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
123	480	Squaw 7-23-09	370		372	358		285	263	258		243	259
284	475	8-1-13	475		365	341			280			260	259
340	480	Squaw 1-26-11	332		370	372	314			276		345	282
1248	400											262	253
1249												268	259
1250												255	248
1251		3-14-12										248	244
1252		4-13-12										238	233
1253		7-17-12	Purchased		from	Navajo	Oil &	Gas Co		12	21	276	269
1254												303	254
1255												265	261
1256												246	201
1257		2-9-15										258	253
1258		8-5-15										253	255
1259		10-25-16										286	253
Rock Pressure Totals					1107	699	314	285	543	534		3681	3783
Number of Readings					3	2	1	1	2	2		14	15
Average Rock Pressure			*430		369	350	314	285	272	267		263	252

*Estimated.

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—INJUN AREA—W

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1 440	7 23 09	222	122	127	109	68	60	38	34	20	15	27
4 771	8 1 13	66	226	229	131	105	131	97	54	44	36	59
877	1 26 11	93	57	40	27	16	27	18	17	11	8	19
										7	18	35
										5	15	22
										2	12	24
	3 14 12									2	13	22
	4 15 12									1	6	10
	7 17 12	Purchased from Navajo Oil & Gas Co.								3	14	24
							12	9 21				
										3	13	16
										3	17	34
											21	31
	2 9 15									5	18	32
	8 5 15									3	13	28
	10 25 16									4	19	34
Produc	on July	726	703	719	733	734	584	514	427	211		
Wells												
duction		1107	1108	1115	1000	923	802	667	532	324	238	417
ive Production		1107	2215	3330	4330	5253	6055	6722	7254	7578	7816	8233

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIEOD—CLENDENIN SAND—WEIR AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
		B.L. & Weir											
442	290	1- 7 13		170	150				99	85		60	51
		B.L. & Weir											
453	325	4- 2 13		170	150		Abandoned 8		9	18			
		B.L. & Weir											
779	135	9-10-12				140	160		85	74		55	45
780		9-28-12					Abandoned 8		2	17			
781	118	11-25-12				305	Abandoned 8		3	17			
782	145	10-20-13				145			84	69		42	40
		2-28-13											
Rock Pressure Totals				340	300	285			268	228		157	136
Number of Readings				2	2	2			3	3		3	3
Average Rock Pressure				170	150	143			89	76		52	45

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—WEIR AREA—X

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
B.L. 5.250	B.L. & Weir											
W2 323	1- 7-13	68	49	67	31	32	18	33	27	30	45	32
	B.L. & Weir											
4 535	4- 2-13	71	54	99	52	34	2	Abandoned 8-19-18				
B.L. 248	B.L. & Weir											
W1 300	9-10-12				35	29	16	31	46	62	72	64
1 000	9-28-12				2	Abandoned 8-12-17						
067	11-25-12				34	61	Abandoned 8-3-17					
248	10-30-16											
094	2-28-13				12	15	6	12	12	12	12	13
Production		139	103	166	166	171	42	76	85	104	129	109
ative Production		139	242	408	574	745	787	863	948	1052	1181	1290

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—SQUAW AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	192
400	480	8- 1-12	260		180	130	160	152	115	100	85	38	D
401	530	8-17-12	260		203	150			88	60	79	*72	6
427	530	10-10-12	260		200		170		98	81	91		
428	360	11-30-12			208				Abd.	1-15	18		
443	310	12-24-12	350	285	407	Abd.	9-15	15					
750	140	2-23-16	B.L.	Sq.	Wea	140			90	82		*74	6
785	160	1- 6-16				144			85	69		50	4
Rock Pressure Totals			780		791	434			476	332		234	17
Number of Readings			3		4	3			5	4		4	
Average Rock Pressure			260		198	145			95	83		59	5

*Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—CLENDENIN SAND—SQUAW AREA—Y

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
11 712	8 1 12	78	18	46	31	65	31	21	45	36	30	
8 862	8 17 12	62	21	25	31	17	15	30	31	16	63	86
1 420	B.L.	67	30	56	44	20	23	32	31	31	34	134
10 495	Sq. 10 10 12											
5 252	11 30 12	151	81	122	72	22	Abd.	1 15	18			
115	B.L.	5	4	2	Abd.	9 15	15					
067	Sq. 12 24 12											
3 216	2 23 16				40	27	20	15	12	8	10	10
3 200	1 6 16				12	29	30	42	33	50	55	53
Production		363	154	251	230	180	119	140	152	141	192	283
ative Production		363	517	768	998	1178	1297	1437	1589	1730	1922	2205

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—CLENDENIN SAND—WEIR AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
		Injun											
274	400	10-20-10	475		290			180	140	123		105	85
472	475	11-19-12	412		220			116	100	105		*65	54
526	350	3-21-13	343		(208)	(173)	(145)	(145)	(132)		(99)	82	80
783	190	10-6-12											
		10-31-15				220	(215)	195	148	128		*122	118
		B.L.& Weir											
784	282	1-9-15				245		*215	*200	*180		150	*105
		11-1-15											
832	485	Injun											
		7-20-16						185	115	83		*72	68
839	480	8-9-16				480		185	150	130		110	105
864	260	10-27-16				260		(250)	130	102		73	D.O.
Rock Pressure Totals			755		510	725		1076	983	851		779	615
Number of Readings			2		2	3		6	7	7		8	7
Average Rock Pressure			378		255	242		179	141	122		97	88

*Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD—CLENDENIN SAND—WEIR AREA—Z

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
	Injun											
1 832	10 20 10	56	183	127	61	31	27	27	15	5	25	19
2 818	11 19 12	109	303	110	60	28	19	20	19	22	21	34
1 056	3 21 13		22					1	7	1	1	2
884	10 6 12											
	10 31 15				30	45	10	20	20	28	35	27
	B.L. & Weir											
1 240	1 9 13				56	107	89	113	93	64	28	20
	11 1 15											
	Injun											
1 420	7 20 16				5	40	18	19	12	12	12	13
1 592	8 9 16				19	39	33	48	41	45	53	43
1 050	10 27 16				14	52	46	49	37	33	38	12
roduction		165	508	237	245	342	242	297	244	210	213	170
ive Production		165	673	910	1155	1497	1739	2036	2280	2490	2703	2873

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	192
1		3-7-17										30	
2	405	1-12-17					405					30	
3	430	12-30-16					430			Oil			
5	380	4-13-17					380					30	
20	305	11-18-18						305				30	
21		11-8-18										30	
22		11-22-18										30	
23		11-16-18										30	
24		6-15-19										30	
34	45	10-25-19										30	
Rock Pressure Totals							1215	305				270	
Number of Readings							3	1				9	
Average Rock Pressure							405	305				30	

NOTE: These wells are all Cabin Creek Gas Company Wells

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD—KANAWHA SAND—WEIR AREA—A

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
8 277	3 7 17					117	123	51	34	21	12	9
12 381	1 12 17					145	53	55	28	21	12	9
5 572	12 30 16					84	95	8	Oil			
8 310	4 13 17					106	142	38	28	18	10	7
2 110	11 18 18							214	70	39	20	15
	11 8 18							117		104	25	19
2 100	11 22 18							72	43	57	18	13
1 186	11 16 18							13	17	19	10	7
1 225	6 15 19								41	31	15	11
260	10 25 19									34	15	11
roduction						452	413	568	261	344	137	101
ive Production						452	865	1433	1694	2038	2175	2276

TE: These wells are all Cabin Creek Gas Company Wells.

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
4	300	2-16-17					300					190	140
10	450	5-3-17					450						100
11	500	10-16-17					500					125	115
19	305	6-9-18							305				
Rock Pressure Totals							1250		305			315	355
Number of Readings							3		1			2	3
Average Rock Pressure							417		305			158	118

NOTE: These Wells are all Cabin Creek Gas Company Wells.

ANNUAL PRODUCTION

(Millions Cubic Feet)

LD—KANAWHA SAND—WEIR AREA—B

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
789	2-16-17					50	198	118	115	87	220	55
970	5-3-17					118	417	113	135	98	25	26
5 850	10-16-17					95	486	181	179	115	179	119
3 893	6-9-18							257	161	165	70	50
oduction						263	1101	669	590	465	494	250
ve Production						263	1364	2033	2623	3088	3582	3832

TE: These Wells are all Cabin Creek Gas Company Wells.

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD KANAWHA SAND WEIR AREA

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	19
7	475	5 24 17					475					275	2
9		4 8 17											
12	490	7 10 17					490					230	1
15	500	6 28 17					500				280	215	1
18	345	10 15 17						345		355		305	2
Rock Pressure Totals							1465	345			280	1025	9
Number of Readings							3	1			1	4	
Average Rock Pressure							488	345			280	256	2

*Estimated.

NOTE. These Wells are all Cabin Creek Gas Company Wells.

ANNUAL PRODUCTION

(Millions Cubic Feet)

LD—KANAWHA SAND—WEIR AREA—C

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
1 500	5 24 17					47	290	223	144	80		
393	4 8 17									14	10	8
5 572	7 10 17					185	425	255	224	176	82	316
5 800	6 28 17					101	359	221	180	51	286	119
2 700	10 15 17						415	199	112	31	302	162
duction						333	1489	898	660	352	680	605
ve Production						333	1822	2720	3380	3732	4412	5017

E: These Wells are all Cabin Creek Gas Company Wells.

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA—

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
		Max &	Weir										
689	495	9- 8-15				483						60	Gd
926	460	8-14-17					460	350				60	Gd
1062		6-23-19											Gd
1063		9-25-19										60	Gd
1064		9- 4-19							203	178	Abd	2 2 21	
1065		8- 3-19										60	Gd
1070		7-23-20										60	Gd
1071		10-16-19							400			60	Gd
1130		9-14-20										60	Gd
1134		7-16-20										60	Gd
1135		9- 6-20										60	Gd
1136		10-28-20											Gd
1194		11-23-20									81	60	53
1195		1- 8-21										60	Gd
Rock Pressure Totals							460	350	203	178		660	53
Number of Readings							1	1	1	1		11	1
Average Rock Pressure							460	350	203	178		60	*50

*Estimated

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—KANAWHA SAND—WEIR AREA—D

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
		Max & Weir											
		9 8 15					162	140	98	121	81	42	36
	11 712	8 14 17					27	94	12	96	38	24	17
	903	6 23 19							12	39	36	20	16
	963	9 25 19							6	73	16	8	7
	600	9 4 19								4	Abd.	2 2 21	
	1 592	8 3 19							41	381	12	33	6
	554	7 23 20								27	20	73	10
	1 784	10 16 19							21	323	31	22	13
	1 935	9 14 20								34	133	41	61
	962	7 16 20								114	27	42	12
	1 183	9 6 20								16	54	78	24
	858	10 28 20								12	135	73	62
	2 463	11 23 20								29		12	44	
	797	1 8 21									116	59	43
Production							189	234	190	1269	699	527	351
ulative Production							189	423	613	1882	2518	3108	3459

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA—E

Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	19
913	410	7-23-17					410	351		(155)		120	105	
925	465	8-18-17					465	388	284		171	160	125	1
927	505	6-15-17					505	396	278		196	160	150	1
928	480	9-15-17					480	356	225	(135)	(115)	150	134	1
929	460	10-24-17					460					165	140	1
944		12-14-17						(310)				110	100	
945	455	11-5-17					455	383			150	155	145	1
961	500	11-14-17					500	379	277		159	145	120	1
1013	405	5-4-18						405	268		195	172	130	1
1014	310	8-31-18						310	272		151	134	89	1
1066	122	5-23-21									(123)	(120)	90	
Rock Pressure Totals							3275	2968	1604		1022	1471	1328	1
Number of Readings							7	8	6		6	10	11	
Average Rock Pressure							468	371	267		170	147	121	1

ANNUAL PRODUCTION

(Millions Cubic Feet)

FIELD—KANAWHA SAND—WEIR AREA—E

	Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
	3 214	7 23 17					79	340	304	220	50	72	55
	25 157	8 18 17					91	172	102	245	65	32	45
	9 200	6 15 17					200	448	302	489	166	81	140
	2 700	9 15 17					215	333	316	373	308	223	142
	4 220	10 24 17					69	224	285	199	194	133	73
	5 800	12 14 17						271	268	190	170	138	97
	2 974	11 5 17					38	204	245	266	192	168	122
	11 712	11 14 17					150	562	270	435	151	107	55
	2 251	5 4 18						43	159	128	48	39	37
	6 921	8 31 18						36	248	180	69	56	44
	1 500	5 23 21										28	110
Production							842	2633	2499	2725	1413	1077	920
ative Production							842	3475	5974	8699	10112	11189	12109

ROCK PRESSURE DATA

(Pounds Per Square Inch Above Atmosphere)

FIELD—KANAWHA SAND—WEIR AREA—

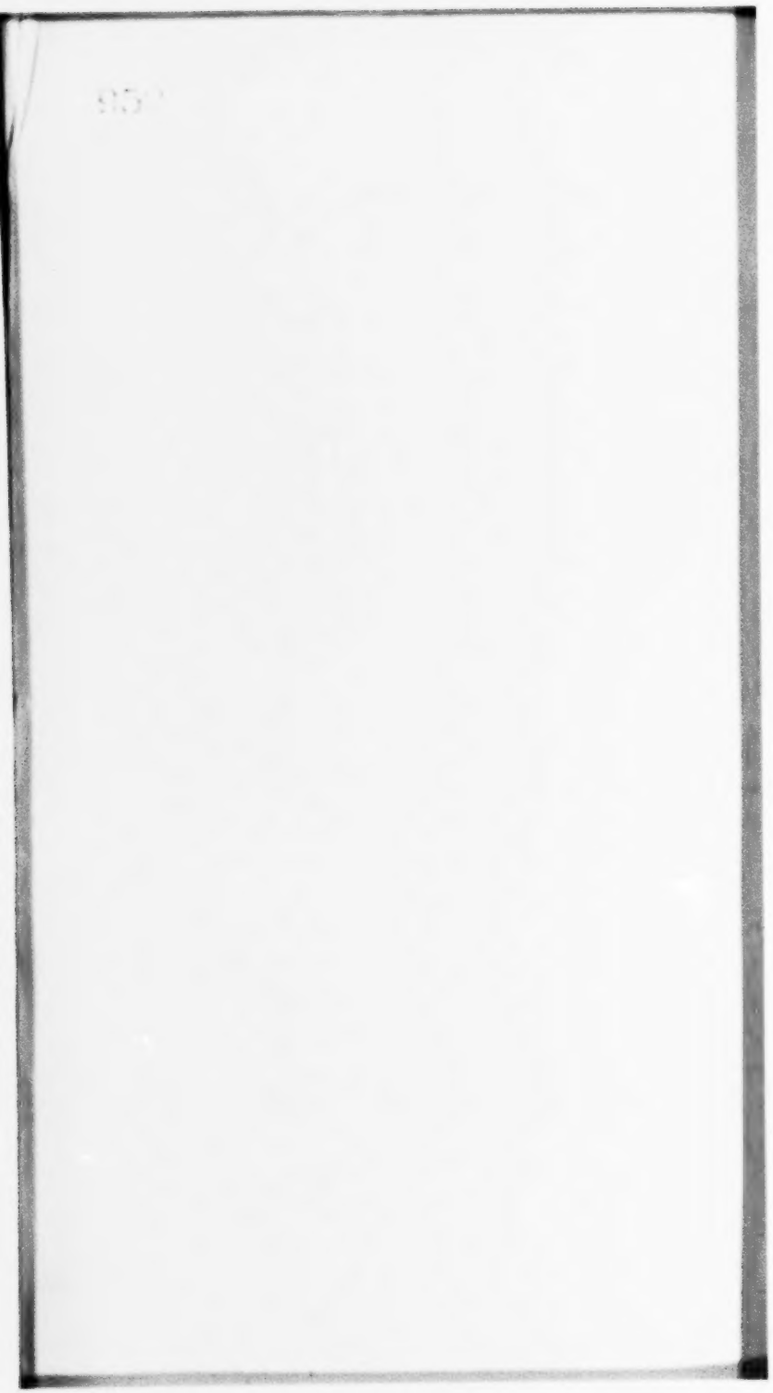
Well No.	Initial Pressure	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
775		3-22-15				(371)		341	(268)	293	249	240	208
946	460	10-4-17					460				422	392	375
960	500	10-30-17					500	391	280		227	202	
969	435	3-8-18							245		315	260	250
970	430	7-22-18						430			310	270	255
971	464	5-3-18						464	205		294	190	180
1147	337	2-12-21									337	266	255
1148	340	1-22-21									339	250	225
1156	325	3-21-21									325	225	187
1157	270	12-2-20								290		229	192
1158	415	11-30-20								408		220	170
1159	386	10-16-20								403		195	175
Rock Pressure Totals							960	1626	730	1394	2818	2939	2472
Number of Readings							2	4	3	4	9	12	11
Average Rock Pressure							480	407	(243)	348	313	245	225

ANNUAL PRODUCTION

(Millions Cubic Feet)

ELD KANAWHA SAND WEIR AREA F

Initial Open Flow	Date Completed	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923
6 19 18												
1 581	3 22 13				26	140	86	56	118	7	13	28
3 706	10 4 17					26	519	510	603	337	277	338
12 449	10 30 17					208	561	447	514	181	106	131
2 166	3 8 18						32	276	231	99	70	113
1 450	7 22 18						21	189	167	71	52	98
2 662	5 3 18						12	113	74	37	22	37
1 550	2 12 21									193	228	179
3 200	1 22 21									311	381	351
1 400	3 21 21									194	237	172
2 017	12 2 20								15	175	189	133
2 236	11 30 20								22	261	197	140
2 302	10 16 20								21	238	215	155
oduction					26	374	1231	1591	1765	2104	1987	1875
ve Production					26	400	1631	3222	4987	7091	9078	10953



MAPS 1-6
TOO
LARGE
FOR
FILMING

Vol. III

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TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, [redacted] 1928

No. [redacted] 4

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

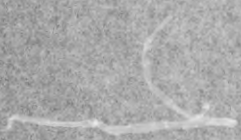
THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, ET AL.

I. Wade Carran and C.E. Nothen,

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA

FILED JUNE 1, 1928

(28,000)



(32,006)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1926

No. 439

UNITED FUEL GAS COMPANY, APPELLANT,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA

VOLUME III

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J60004

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[fol. 1197] DAVIS EXHIBIT "Z"

United Fuel Gas Company

Appraisal of Natural Gas Property, December 31, 1923

Ralph E. Davis, Engineer, Pittsburgh, Pennsylvania

[fol. 1198] United Fuel Gas Company

Appraisal of Natural Gas Property, December 31, 1923

Property Owned

The United Fuel Gas Company and its subsidiaries the Cabin Creek Gas Company and the Warfield Natural Gas Company, owned December 31, 1923 a total of 814,910.68 acres of fee and leasehold property located in the natural gas belt of southern West Virginia and eastern Kentucky. Of this total 704,796.83 acres were located in West Virginia and 110,113.85 acres were located in Kentucky.

The three companies owned on December 31, 1923, 796.7 gas wells of which 750.7 were located in West Virginia, the remaining 46 wells being located in Kentucky.

The three companies owned a complete system of field gathering lines, compressor stations, transportation lines, distribution plants, suitable and competent for the gathering and delivery of natural gas to its various markets.

In a separate report dealing with the acreage held on December 31, 1923, the writer has shown that the territory classed as proven contains approximately 249.1 billion cubic feet of gas and that the territory classed as probable contains approximately 414.6 billion cubic feet of gas. These estimates have been made after a thorough study of all pertinent data available. The total estimated reserve, 663.7 billion cubic feet, is used in this appraisal mainly as a guide in mapping the probable future operations of the company.

Property Valued

Value is placed on that portion of the above property which would be useful and of value, assuming the com-

pany free of all present contracts and obligations for the [fol. 1199] sale and delivery of gas and free to find that market most advantageous to it.

Such portions of the property owned as have value only in their use in serving present consumers are not included in this appraisal. The true value of such property depends largely on its usefulness, and this in turn depends on whether present or new markets are to be served.

Basis of Valuation

The value of a property capable of producing natural gas is conceived to be measured by the prospective earning power of the property placed at its most advantageous use. To determine the value of such property it is necessary to consider the present use to which the property is placed and to compare this use with other uses available. If the present use is found to be most advantageous, the valuation will be dependent upon the prospective earning power of the property in its present use. If a more advantageous use be found available, it is necessary to determine if such use be competent to return a greater earning and the amount of such earning.

The basis of valuation used herein is that now commonly used in the determination of value of mineral properties. It has long been the custom of mining engineers to value a mining property on the basis of expected earnings, reduced to present worth, and calculated on estimated ore reserves both proven and probable. Scientific appraisals of mineral properties have been made for the Tax Commission of Michigan (by J. R. Finlay in 1911) and for the Tax Commission of New Mexico (by J. R. Finlay in 1922). The United States Treasury Department has for some years based depletion allowances on the estimated reserves of mineral properties, including oil and natural gas, and the depletable value, if determined by appraisal, is usually based on the prospective earnings of the property, reduced to "present worth."

History of Gas Production in Appalachian Field

In studying the value of any natural gas property located in the Appalachian Field, consideration must be

given the history of the natural gas industry in said field [fol. 1200] in order that a proper perspective of the problem may be obtained. Twenty years ago, natural gas was produced in enormous quantities as a by-product in oil production. A part of the gas so produced was brought under control and sold for manufacturing purposes, mainly at prices ranging from 3¢ to 6¢ per M cubic feet. A considerable part of the gas so produced was wasted, there being no competent market for the entire output of gas. During the past twenty years the natural gas industry of the Appalachian Field has undergone a fundamental change brought about by three principal causes:

(1) Drilling for oil is no longer prosecuted to the great extent that was formerly the case, hence the production of gas as a by-product from oil production is greatly reduced.

(2) The gas fields of the Appalachian Field have been greatly depleted of their original gas content so that today a large number of wells are required to deliver the same quantity of gas formerly delivered by a single well.

(3) With the increase in the demand for gas and the diminishing supply, it has become necessary to drill a large number of wells primarily for the purpose of producing gas. Hence the cost of gas production must be borne entirely by the consumers of gas.

With the passing of time and with the decline in the supply of natural gas, the price of gas has naturally advanced in all of its primary markets. This advance in price has long since passed the point where natural gas may be used inefficiently and without regard to its value. The supply of natural gas has decreased to the point where it is now difficult for the natural gas companies of the Appalachian Field as a whole to supply during the colder months of the year the full requirements of their domestic consumers alone and this has necessitated, during the last few years particularly, the shutting off of industrial users in most localities during cold weather. The result is that industrial plants requiring a large and constant fuel supply have been driven to the use of bituminous coal either in [fol. 1201] whole or in part. It is commonly known that at

present most of the industrial plants located in various cities in West Virginia, western Pennsylvania and eastern Ohio use coal as a primary source of heat during cold weather and use natural gas to a limited extent during other periods of the year.

A study of the prices which now obtain for natural gas delivered to industrial plants using a large quantity of gas reveals the fact that in most industrial centers in the Appalachian natural gas belt, natural gas commands a price ranging from 18¢ per M cubic feet in the territory now supplied by the United Fuel Gas Company to prices ranging from 32¢ to 60¢ and averaging not less than 40¢ per M cubic feet in the territory served by most of the natural gas companies of the Appalachian gas field.

Present Use of United Fuel Gas Company Property

The property of the United Fuel Gas Company is at present used for the production, transmission and distribution of gas to various wholesale and retail markets. Gas is supplied in wholesale quantity at Cedarville, West Virginia, to the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company; at Ravenswood, West Virginia, to The Ohio Fuel Supply Company; at Ballsgap to the Columbia Gas & Electric Company and at various other points to various purchasers. Gas is supplied to industrial users and is distributed to domestic consumers in Charleston, Huntington and some forty cities and towns in West Virginia. The total quantity of gas produced by the Company and sold in 1923 was 37,370,482 M cubic feet (*). The total additional quantity of gas purchased and resold in 1923 was 9,669,753 M cubic feet (**).

A study of the prices received by the United Fuel Gas Company for gas during 1923 from its various customers [fol. 1202] reveals the fact that the property is not at present used in the most advantageous way possible, on account of the restrictions imposed on it by various contracts and by certain decisions relating to the price of gas.

*Includes gas produced by subsidiary companies.
**Excludes gas purchased from subsidiary companies.

(1) An example of contract obligation impairing earning power is afforded in the contracts entered into in 1916 with the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company, terms of said contracts requiring the United Fuel Gas Company to delivered and the other two companies to purchase large quantities of gas delivered at Cedarville, West Virginia, under a price schedule now obsolete. Said contracts do not expire until December 31, 1926, and although various modifications of price have been made from year to year as conditions have made necessary, the fact remains that the United Fuel Gas Company is placed in a disadvantageous position in negotiating said prices. Under the terms of modified contract entered into as of August 1, 1923, the average price received for gas delivered at Cedarville has averaged for the nine months ending April 30, 1924, $0.2266 per M cubic feet.

(2) A second example of contract obligations which impair the earning power of the United Fuel Gas Company are the contracts entered into in 1909 with the then owners of the United Fuel Gas Company. These contracts stipulate a price for gas delivered in large quantities at prices averaging slightly in excess of 7¢ per M cubic feet.

(3) A third example of restriction on the price received for gas as compared to that which would obtain in a free market is found in the price stipulated to industrial users and domestic consumers in the State of West Virginia, these prices starting at 18¢ and 20¢ per M cubic feet respectively.

It is evident that where the company is able to receive in excess of 20¢ per M cubic feet for gas delivered in large quantity through a single meter, it is placed at a disadvantage in delivering small quantities of gas through a large [fol. 1203] number of meters at a lesser price. Were the law of supply and demand permitted freedom in determining either the market to which gas would flow or the prices at which it would be sold, it is evident that either the price now being received from consumers in West Virginia would be increased or the gas now supplied to said consumers would flow to markets where a higher price prevails.

Prospective Use of United Fuel Gas Company Property

1. Pittsburgh Market.

The industrial district of which Pittsburgh is the center affords an excellent opportunity for a study of the value of natural gas in competition with bituminous coal for the reason that each of these fuels has been available for years in this district at low cost. The cost of natural gas delivered to the industrial plant in the Pittsburgh district was so low for many years prior to 1918 that no serious attempt had been made to use bituminous coal in the coking plants economically. The waste of gas and other valuable products in the manufacture of coke by the beehive process is notorious. Not until the dwindling supply of natural gas forced a higher market price, and increased mining costs brought about a higher price for coal, did the management of the large steel and coke companies find it necessary to restrict the enormous waste hitherto allowed. The art of using coal for steel manufacture is now highly developed. Where the fuel is required in gaseous form, the coal is converted into gas either in a producer plant or as a by-product in the coking plant. This has developed a condition in the steel industry in which natural gas competes as a fuel with bituminous coal under circumstances in which the coal is most efficiently used.

In the Pittsburgh district, we find natural gas now being supplied to industrial consumers at prices ranging from 35¢ to 50¢ per M cubic feet. It is evident that the owner of an industrial plant will use natural gas at these prices only if he finds it cheaper to do this than to supply his fuel requirements from some other source. It is also evident that one industrial user may be able to purchase natural {fol. 1204} gas at a given price in preference to another fuel because his manufacturing process is one in which natural gas is peculiarly adapted for efficient use whereas another industrial user may find that at the same price natural gas is not his most economical fuel but that bituminous coal properly used results in greater economy.

We find that today the steel industry of the Pittsburgh district is emerging from the period when natural gas was

largely used as a fuel and entering a period in which bituminous coal supplies the fuel requirements formerly met by natural gas. It is evident that a critical period in the use of natural gas in the steel industry of the Pittsburgh district has been reached. It becomes important therefore to inquire as to the relative merits of these two fuels in steel making and to determine at what price natural gas passes from the more economical to the more expensive of the two fuels.

In the following Table No. 1 there is presented in summary form a calculation of the relative cost of melting steel in an open hearth furnace where natural gas competes with bituminous coal as a fuel. The calculations showing the cost resulting from the use of coal are conservative. The cost of gas coal at the mine is taken at $2.75 per ton for screened gas coal such as is used in the manufacture of producer gas. The freight rate is that now obtaining for coal delivered in Pittsburgh from the Connellsville District. The investment cost for the producer gas plant, and the operating cost of same have been carefully checked by engineers most familiar with this practice and the estimated cost as presented is deemed conservative. This comparison shows that natural gas will compete with coal in steel making up to a price of at least 35¢ per M cubic feet. The fairness of the calculation is further strengthened by the fact that natural gas is now being supplied to steel companies in the Pittsburgh district at 35¢ per M cubic feet.

2. Other Available Markets.

The transmission system of the United Fuel Gas Company [fol. 1205] is now connected with the lines of various other companies through which gas may be delivered to the principal natural gas markets of the Ohio valley. At comparatively small expense, connections with the lines of additional companies having large markets can be made. This situation is sufficiently strategic to enable the United Fuel Gas Company to command for its gas supply, once the limitations of existing contracts have expired, the maximum value of its gas supply. This situation is sufficiently real to make it unnecessary for the United Fuel Gas Company to undertake the actual construction of lines to the Pitts-

burgh district, as it will shortly be able to command a price at Cedarville or elsewhere which will neutralize the advantage of a direct market in Pittsburgh.

Value of Natural Gas

The various considerations enumerated above lead to the conclusion that the actual value of natural gas, as measured in the industrial market of the Pittsburgh district, is a proper value to be used in appraisal of the United Fuel Gas Company property. Existing contracts and regulations which prohibit to some extent the realization of such value for gas sold must be considered a liability of the company affecting earnings but not affecting the true value of the property owned, and ending with the expiration of the contracts or regulations now in force.

Appraisal

Principle of Appraisal

The property of the United Fuel Gas Company is considered to consist of two parts, (a) that property which would be useful for the production and transmission of gas were the present use of the property as a whole abandoned and a more profitable use substituted, and (b) such portion of the property as is useful only for the purpose of serving present markets.

The property useful for serving a new and more profitable market such as the industrial market of the Pittsburgh district includes the gas rights in leasehold property, gas wells and their equipment, field gathering lines, compressor stations and other equipment now used in the production, [fol. 1206] gathering and delivery of gas to and through the central gathering station of each of the several gas fields operated by the company, also a part of the transportation lines. Of the latter, all lines in and used in the delivery of gas from the Triple State Field are included, as gas from this field can be delivered to a profitable market, essentially as desirable as the Pittsburgh market. (Price received for gas delivered to Portsmouth Gas Company 30¢ per M cubic feet, and annual requirement approximates output of Triple State Field.) Transportation lines connecting the Kanawha and Spencer Fields with the

Clendenin Field (Cobb Station) and line used for the transmission of the collected gas to Cedarville are included.

Certain general equipment such as office building and equipment, etc., would be necessary for the operation of the company were present markets abandoned, hence these items of general equipment are included in the appraisal of the property useful in serving a new market.

The property useful only for the serving of present markets includes all distribution plants and a part of the main transportation lines leading from the central gathering stations to the points at which gas is now delivered.

The property useful in the production of gas for serving a new market is valued as a single complete unit. The appraisal of this property is carried out along lines generally used in the appraisal of mineral properties—the present value of expected earnings is found. The factors considered in the determination of expected earnings are those usually considered by practical gas men in determining the value of a property open to purchase. The method is no more theoretical than that commonly employed by the most practical gas company executive—it is his method reduced to standard engineering form.

Expected life of Property

The United Fuel Gas Company may be conservatively appraised as valuable for the production of natural gas for eighteen years beginning in 1924. A considerably longer, useful and profitable operation may fairly be expected, but no value is assigned in this appraisal for earnings that may accrue after the expiration of eighteen [fol. 1207] years. It may be pointed out that the life of a natural gas property depends upon the ultimate quantity of gas to be produced and the rate at which this gas is produced. The writer has shown elsewhere that the United Fuel Gas Company property may be expected to produce approximately 663.7 billion cubic feet of gas after 1923. In this appraisal an ultimate production of 636.1 billion cubic feet is given value.

Expected Purchases of Gas

The property is at present being operated by meeting the market requirements for gas by purchasing such quan

tities of gas as can be economically purchased, and by delivering from its own gas reserve the remaining quantity of gas necessary to meet market demand. It is essential that this policy be continued in the future operation of the property, hence in appraisal it is necessary to take into account the effect on earnings of handling purchased gas. In Table No. 2, there is shown the quantity of gas purchased in each past year by the three companies, also a conservative estimate of the quantity of gas that will be purchased in the future. This estimate of future gas purchases includes only the quantity of gas that may be expected through the continued operation of gas purchase contracts in effect January 1, 1924. Considerably greater quantities of gas will doubtless be purchased in the future and to whatever extent this is true, greater earnings than those indicated will be ultimately obtained.

Expected Annual Production

The production of the three companies for past years is shown in Table No. 2. In this table there is shown also the expected future annual production of the three companies used in this appraisal. It will be noted that the expected production in each of the first eight years is sufficient to maintain with the expected quantities of gas to be purchased a uniform delivery of 47.5 billion cubic feet. The Company is able at the present time to deliver from its own wells if necessary at least 47.5 billion cubic feet per year. It does not do this because it is able to purchase gas economically and thereby conserve its own gas supply. [fol. 1208] It will be noted that a decreasing output of gas is anticipated after the eighth year, the rate of decrease averaging about three billion cubic feet annually during the following ten-year period.

The writer believes that the above estimate of delivery of both produced and purchased gas is conservative.

New Wells Required

In order that the company may produce the above-mentioned quantities of gas in future years, the writer believes that a more active drilling program than that pursued in the past will be necessary. Such a drilling pro-

gram is formulated and shown herewith in Table No. 3. It is assumed that the company will drill 100 wells during 1924 of which 10% will be dry holes and 90% producers. (In the year 1923, 60 wells were drilled, 57 being producers and 3 dry.) The number of wells required annually thereafter is increased to a maximum of 220 wells in the ninth year of which 10% may be expected to be dry holes. After reaching a maximum drilling program after some eight or ten years, it is probable that the drilling program will decline. If the drilling program does not decline, it will be because the property is to continue an active producer after the expiration of eighteen years. It is therefore proper in the study of earnings expected during eighteen years only to assume a decline in the drilling program during the later years.

Abandonment of Wells

As the property becomes older, there will be an increase in the rate of abandonment of old wells. Up to the present time the necessity of abandoning wells has been slight, but as the older territory is depleted, abandonment will become more marked. An expected rate of abandonment starting with 25 wells in 1924 and increasing to 150 wells in the eighteenth year is indicated in Table No. 3.

[fol. 1209] Expected Number of Productive Wells

On January 1, 1924, the three companies owned 796.7 gas wells. The drilling program and abandonment program outlined indicates for each future year the probable number of active wells which shows a maximum of roughly 2,000 wells after about ten years' operation. The number of active wells in each year from 1912-1923 is shown graphically on Graph No. 1, and the number of active wells expected in the future is indicated also on this graph.

Average Well Production

The actual average annual production per well in each year from 1912 to 1923 is illustrated on Graph No. 1, also the expected future average annual production per well. It will be noted that decline in output per well is expected to

continue at the same average rate that has obtained during the past eleven years until the output declines to an average of 10 million feet per well annually. The experience of older gas properties shows that a production of this minimum amount per well can be maintained for some years, hence this minimum is expected in the later years.

Value of Gas

The value of natural gas delivered in the Pittsburgh district and measured by its value in steel manufacture in competition with bituminous coal has been shown to be not less than 35¢ per M cubic feet. The value calculated in Table No. 1—$0.3325 per M cubic feet is used, to allow for line loss between Cedarville and Pittsburgh.

The cost of transporting gas from Cedarville to the Pittsburgh district is estimated at $0.0526 per M cubic feet by Ford, Bacon & Davis, Inc. See Uebelacker Exhibit No. 1. The difference between the value of gas at Pittsburgh and the cost of delivering gas from Cedarville to Pittsburgh is $0.2799.

Cost of Gas

The actual cost to the three companies in the year 1923 of producing, purchasing and delivering gas in wholesale quantity, (exclusive of depletion, earning on investment or [fol. 1210] value of property, and Federal Income Taxes, but including general taxes, depreciation and general expense) has been determined by Ford, Bacon & Davis, Inc. to be $0.7989. See Uebelacker Exhibit No. 1.

Cost of New Wells

The cost of drilling and equipping new wells, extending field lines and abandoning wells is estimated at $11,000 per well. The use of material salvaged from abandoned wells and abandoned lines will be a factor in maintaining a reasonable cost. The average depth of wells will probably be about 2,000 feet.

The cost of drilling and equipping new wells and making field connections will actually be charged to investment by the company, but for the purpose of this study these costs are charged against the expected production in each year

that they occur. This calculation is shown in detail in Table No. 4.

Calculation of Value of Property

All of the above elements of appraisal are brought together in Table No. 5 in which the calculation of value is made. The following explanation of this calculation is presented in order that each item may be easily understood:

Column 1.—Year.

Column 2.—Expected Production in each year.

Column 3.—Expected gas purchases in each year.

Column 4.—Expected gas sales in each year.

Column 5.—Value of gas delivered through Cedarville. It will be noted that no increase in value is indicated although there will surely be an increase in value when the scarcity of gas makes it uneconomic for natural gas to compete with bituminous coal in the steel industry.

Column 6.—Estimated cost of producing and transporting gas in each year. This unit cost is based on the cost of $0.07989 for the year 1923, determined by Ford, Bacon & Davis, Inc., and for convenience considered to be $0.08. A [fol. 1211] trend in cost of ¼¢ per year, based on experience of the United Fuel Gas Company, is assumed.

Column 7.—Unit cost for new wells. Explained above and in detail in Table No. 4.

Column 8.—Total cost per M cubic feet—sum of columns 6 and 7.

Column 9.—Net value per M cubic feet—difference between column 5 and column 8.

Column 10.—Compound discount factor based on 8% value of money. This factor applied to the expected earnings of a given year reduces the amount to present worth on January 1, 1924.

Column 11.—Expected net income before amortization found by multiplying the unit value of gas shown in column 9 by the output of gas shown in column 4.

Column 12.—Present worth of expected net income before amortization. Found by multiplying the item in column 11 by the discount factor in column 10.

The total of column 11 shows the expected net income before amortization of cost. The total of column 12 shows the total present worth as of January 1, 1924. The differ-

ence ($35,210,094.07) indicates the excess of earnings over calculated value. These earnings will be subject to Federal Income Tax which is estimated on the basis of the present rate of taxation—12½%. The purchaser of this property at the value calculated might expect total Federal Income Taxes of $4,401,261.76 (first approximation). Allowing for this, he could afford to pay $52,181,538.17, thus having an investment on which he should expect a return of capital during 18 years and an average earning thereon of 8% after payment of Federal Income Taxes.

There is shown in Table No. 6 an illustration of the division of expected earnings between amortization of appraised value, Federal Income Taxes and remainder avail-
[fol. 1212] able for dividends. This illustration shows a variation in percentage earned on remaining investment, available for dividends. This variation from the 8% average is due to (a) the variation in the drilling program, the money remaining available for dividends being less than the average during years of most active drilling and above the average in years of inactive drilling; and (b) to the amount written off each year to amortize investment. Amortization has been calculated on the basis of ratio of production to reserves, as detailed in Table No. 7.

Summary

The value of the property useful for the serving of new but available markets is shown to be $52,181,538.17.

Of the above property there is included in addition to fee and leasehold property held for the production of natural gas, certain property which has recently been appraised as of December 31, 1923 by Ford, Bacon & Davis, Inc. (See Uebelacker Exhibit No. 2.) The following table gives the general classification and value of this property as determined by Ford, Bacon & Davis, Inc.:

	Value new	Value new less deterioration
Production System Property	$15,275,580 00	$10,127,919 00
Transmission System Property	9,268,525 00	8,865,962 00
General Property	822,366 00	729,528 00
Total	$25,366,471 00	$19,723,409 00

Total value of property useful in serving new market, as determined herein	$52,181,538 17
Depreciated value of property included other than natural gas fee and leasehold property	19,723,409 00
Value natural gas fee and leasehold property	$32,458,129 17

The value of property useful only in serving present markets is not determined by this appraisal, as the value of such property is dependent primarily on its being continued in service.

[fol. 1213] Table No. 1

Value of Natural Gas for Use in Steel Manufacture Determined by Comparison with Hot Producer Gas (Uncleaned) Manufactured from Connellsville Gas Coal

Estimate for Construction & Operating a Hot Producer Gas Plant of 90-ton Daily Capacity (No Production One Day per Week, Burning out Flu-, Three Eight-hour Shifts)

Construction Cost

1. Three producers	$25,000 00
2. Producer Building and Bunkers.	20,000 00
3. Steam Piping.	1,000 00
4. Foundations	9,000 00
5. Erection of Producer and Building .	3,000 00
6. Hot Gas Main—500' long.	6,000 00

7. Electrical Equipment and Installation	1,000 00	
8. Miscellaneous (Water pump, Tower Connections, Freight, etc.)	5,000 00	
9. Siding	7,000 00	
Total Investment.		$77,000 00

Operating Cost per Month

1. 30 tons coal per day per producer × 3 producers × $4.00 per ton 25 days (F. O. B. Plant including handling and breaking)	9,000 00
2. Labor 3 Gas Makers / 1 Ash Man / 6 Helpers = men @ $5 per day × 30 days.	1,500 00
3. Steam 60,000 lbs. steam per day × 25 days × $0.40 per 1,000 lbs	600 00
4. Repairs and Supplies.	250 00
5. Administratrative Expenses and Miscellaneous; Insurance, Taxes, Exec. Salaries, Travelling Expense, Telephone, etc	1,000 00
6. Depreciation (5% on $77,000 investment)	320 00
7. Power 5 H. P. per producer = 15 H. P. = 11 Kw. 11 × 24 hrs. = 264 K. W. H. × $0.03 per K. W. H. × 30 days	237 50
8. Interest on Investment (6% of $77,000)	385 00
Total Operating Expense	$13,292 50

[fol. 1214]

Revenue

1. 125,000 cubic feet gas per ton coal × 90 tons = 11,250,000 cu. ft. gas per day; 11,250,000 × 25 days = 280,000,000 cubic feet gas 280,000,000 cu. ft. to return $13,292.50 = $0.0475.

Comparison to Natural Gas

Producer Gas: B. t. u. per cubic ft. = about 150.
Natural Gas: B. t. u. cubic ft. = about 1,050.
Producer Gas = 1/7 Natural Gas in B. t. u. 7 × $0.0475 = $0.3325.

In determining the actual relative value of the two fuels considered above, it is necessary to take into account the following additional facts:

1. The use of natural gas increases the rate of steel production about 50% in the open hearth furnace.

2. The use of producer gas causes increased repairs to the open hearth furnaces on account of more frequent destruction of the furnace walls.

3. The sulphur content of producer gas affects the quality of the steel produced.

It is difficult to measure accurately the effect of these three items but it is conservative to consider that natural gas is preferable at a cost of 35¢ per M cubic feet.

DAVIS EXHIBIT "Z"—Continued

[fol. 1215]

Table No. 2

Table Showing Gas Produced in Each Year 1909-1923, Expected Annual Production 1924-1941, Gas Purchased 1909-1923, Expected Annual Gas Purchases Based on Contracts Existing January 1, 1924

Year	Gas produced in each year, 1909-1923, M cu. ft.	Gas purchased, 1909-1923, M cu. ft.
1909	3,370,874	None
1910	16,860,540	2,316,671
1911	19,721,836	4,003,352
1912	24,028,738	4,592,212
1913	22,757,578	5,394,022
1914	21,047,162	8,235,983
1915	19,578,870	10,015,803
1916	28,904,224	10,386,222
1917	48,921,616	11,689,250
1918	45,985,640	11,049,506
1919	42,235,495	9,951,503
1920	43,734,217	8,774,993
1921	33,464,075	9,205,038
1922	37,721,087	9,904,135
1923	37,370,482	9,669,753

Year	Expected annual production, 1924–1941, bil. cu. ft.	Expected annual gas purchases based on contracts existing January 1, 1924
1924	38 0	9 5
1925	38 5	9 0
1926	40 3	7 2
1927	42 9	4 6
1928	44 6	2 9
1929	44 7	2 8
1930	45 6	1 9
1931	46 8	0 7
1932	43 8	
1933	42 5	
1934	40 4	
1935	35 2	
1936	30 4	
1937	25 0	
1938	20 6	
1939	20 1	
1940	19 0	
1941	17 7	

DAVIS EXHIBIT "Z"—Continued

[fol. 1216]

Table No. 3

Table Showing Estimated Number Producing Wells Each Year and Expected Production

Year	Wells drilled	Dry holes	Producers	Abandoned wells	Net change	Producers end of year (1923=797)	Average production per well per mil. cu. ft.	Total production, billion cu. ft.
1923						796 7	45 5	
1924	100	10	90	25	65	862	44 0	38 0
1925	125	12	113	25	88	950	40 5	38 5
1926	150	15	135	25	110	1,060	38	40 3
1927	175	18	157	25	132	1,192	36	42 9
1928	190	19	171	50	121	1,313	34	44 6
1929	200	20	180	50	130	1,443	31	44 7
1930	200	20	180	50	130	1,573	29	45 6
1931	200	20	180	50	130	1,703	27 5	46 8
1932	220	22	198	75	123	1,826	24	43 8
1933	200	20	180	75	105	1,931	22	42 5
1934	180	18	162	75	87	2,018	20	40 4
1935	170	17	153	100	53	2,071	17	35 2
1936	140	14	126	100	26	2,097	14 5	30 4
1937	100	10	90	100	-10	2,087	12	25 0
1938	80	8	72	100	-28	2,059	10	20 6
1939	60	6	54	100	-46	2,013	10	20 1
1940	40	4	36	150	-114	1,899	10	19 0
1941	20	2	18	150	-132	1,767	10	17 7
	2,560	255	2,295	1,325				636 1

[fol. 1218]

Year	Gas production, bil. cu. ft.	Gas purchased, bil. cu. ft.	Gas sol bil. cu.
1924	38 0	9 5	47 5
1925	38 5	9 0	47 5
1926	40 3	7 2	47 5
1927	42 9	4 6	47 5
1928	44 6	2 9	47 5
1929	44 7	2 8	47 5
1930	45 6	1 9	47 5
1931	46 8	0 7	47 5
1932	43 8		43 8
1933	42 5		42 5
1934	40 4		40 4
1935	35 2		35 2
1936	30 4		30 4
1937	25 0		25 0
1938	20 6		20 6
1939	20 1		20 1
1940	19 0		19 0
1941	17 7		17 7
	636 1	38 6	674 7

Table No. 5

Calculation of Value

DAVIS EXHIBIT "Z"—Continued.

Passed, sq. ft.	Gas sold, bil. cu. ft.	M cu. ft. gas value at Cedarville	Producing, transmission, prospecting cost per M cu. ft., 1¢ trend	Cost new wells per M cu. ft.	Total cost per M cu. ft.
5	47 5	2799	0825	02895	11145
0	47 5	2799	0850	03571	12071
5	47 5	2799	0875	04094	12844
0	47 5	2799	0900	04487	13487
5	47 5	2799	0925	04686	13936
0	47 5	2799	0950	04922	14422
5	47 5	2799	0975	04825	14575
0	47 5	2799	1000	04701	14701
	43 8	2799	1025	05525	15775
	42 5	2799	1050	05176	15676
	40 4	2799	1075	04901	15651
	35 2	2799	1100	05313	16313
	30 4	2799	1125	05066	16316
	25 0	2799	1150	04400	15800
	20 6	2799	1175	04272	16022
	20 1	2799	1200	03284	15284
	19 0	2799	1225	02316	14566
	17 7	2799	1250	01243	13743
6	674 7				

Net value per M cu. ft	% c. d. f.	Expected net income before amortization	Present worth
16845	96225	$8,001,375 00	$7,699,323 09
15919	89097	7,561,525 00	6,737,091 93
15146	82497	7,194,350 00	5,935,122 92
14503	76387	6,885,925 00	5,262,243 14
14054	70728	6,675,650 00	4,721,553 73
13568	65489	6,444,800 00	4,220,635 07
13415	60638	6,372,125 00	3,863,929 16
13289	56146	6,312,275 00	3,544,089 92
12215	51987	5,350,170 00	2,781,392 88
12314	48136	5,233,450 00	2,519,173 49
12339	44571	4,984,956 00	2,221,844 74
11677	41269	4,110,304 00	1,696,281 36
11674	36212	3,848,896 00	1,356,104 14
12090	35382	3,022,500 00	1,069,420 95
11968	32761	2,465,408 00	807,692 31
12706	30334	2,553,906 00	774,701 85
13424	28087	2,550,560 00	716,375 99
14247	26007	2,521,719 00	655,823 46
		56,582,799 93	
	Earning	35,210,094 07	
		91,792,894 00	56,582,793 93
		12½ of Earning	4,401,261 76
		Market Value	52,181,538 17

[fol. 1217]

Table No. 4

Estimated Cost New Investment ($11,000.00 per Well)

Year	Wells drilled	Cost	Annual production, bil. cu. ft.	Cost M cu. ft.
1924	100	$1,100,000 00	38 0	02895
1925	125	1,375,000 00	38 5	03571
1926	150	1,650,000 00	40 3	04094
1927	175	1,925,000 00	42 9	04487
1928	190	2,090,000 00	44 6	04686
1929	200	2,200,000 00	44 7	04922
1930	200	2,200,000 00	45 6	04825
1931	200	2,200,000 00	46 8	04701
1932	220	2,420,000 00	43 8	05525
1933	200	2,200,000 00	42 5	05176
1934	180	1,980,000 00	40 0	04901
1935	170	1,870,000 00	35 2	05313
1936	140	1,540,000 00	30 4	05066
1937	100	1,100,000 00	25 0	04400
1938	80	880,000 00	20 6	04272
1939	60	660,000 00	20 1	03284
1940	40	440,000 00	19 0	02316
1941	20	220,000 00	17 7	01243

(Here follows table No. 5 of Davis Exhibit "Z," marked side folio page 1218)

DAVIS EXHIBIT "Z"—Continued

[fol. 1219]

Table No. 6

Division of Expected Income Between Amortization, Federal Income Tax, Available for Dividends

Year	Expected net income before amortization	Amortization	Expected net income after amortization	Federal income taxes (assume 12½%)	Remaining net income for dividends	Expected earnings available for dividends, %
1924	$8,001,375 00	$3,117,274 71	$4,884,100 29	$610,512 54	$4,273,587 75	8.190
1925	7,561,525 00	3,158,291 48	4,403,233 52	550,404 19	3,852,829 33	7.853
1926	7,194,350 00	3,305,951 86	3,888,398 14	486,049 77	3,402,348 37	7.412
1927	6,888,925 00	3,519,239 08	3,369,685 92	421,210 74	2,948,475 18	6.921
1928	6,675,650 00	3,658,686 11	3,016,963 89	377,119 24	2,639,834 65	6.755
1929	6,444,800 00	3,666,869 46	2,777,930 54	347,237 57	2,430,662 97	6.862
1930	6,372,125 00	3,740,729 65	2,631,395 35	328,924 42	2,302,470 93	7.251
1931	6,312,275 00	3,839,169 91	2,473,105 09	309,138 14	2,163,966 95	7.724
1932	5,350,170 00	3,593,069 27	1,757,100 73	219,637 59	1,537,463 14	6.360
1933	5,233,450 00	3,486,425 66	1,747,024 34	218,378 04	1,528,646 30	7.427
1934	4,984,956 00	3,314,155 22	1,670,800 78	208,850 10	1,461,950 68	8.551
1935	4,110,304 00	2,887,580 79	1,222,723 21	152,840 40	1,069,882 81	7.763
1936	3,548,896 00	2,493,819 77	1,055,076 23	131,884 53	923,191 70	8.474
1937	3,022,500 00	2,050,838 63	971,661 37	121,457 67	850,203 70	10.121
1938	2,465,408 00	1,689,891 03	775,516 97	96,939 62	678,577 35	10.687
1939	2,553,906 00	1,648,874 26	905,031 74	113,128 97	791,902 77	16.995
1940	2,550,560 00	1,558,637 36	991,922 64	123,990 33	867,932 31	28.829
1941	2,521,719 00	1,451,993 75	1,069,725 25	133,715 66	936,009 59	64.464
	91,792,894 00	52,181,538 00	39,611,356 00	4,951,419 52	34,659,936 48	

DAVIS EXHIBIT "Z"—Continued

[fol. 1220]

Table No. 7

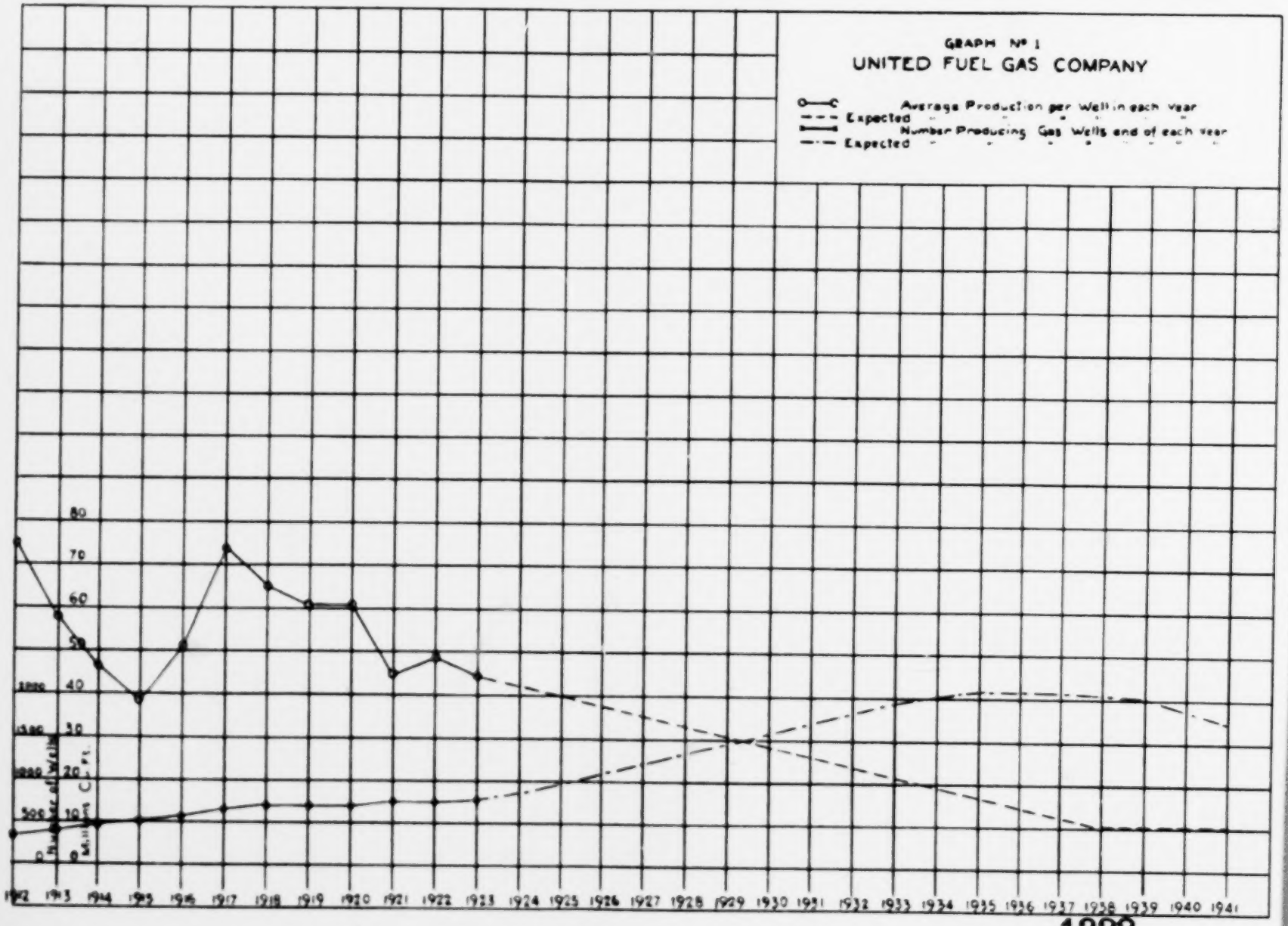
Calculation of Amortization

Year	Ratio of production to reserve		Capital sum to be amortized	Amount amortized
1924	38 0 / 636 1	X	$52,181,538 00	$3,117,274 71
1925	38 5 / 636 1	X	"	3,158,291 48
1926	40 3 / 636 1	X	"	3,305,951 86
1927	42 9 / 636 1	X	"	3,519,239 08
1928	44 6 / 636 1	X	"	3,658,696 11
1929	44 7 / 636 1	X	"	3,666,899 46
1930	45 6 / 636 1	X	"	3,740,729 65
1931	46 8 / 636 1	X	"	3,839,169 91
1932	43 8 / 636 1	X	"	3,593,069 27
1933	42 5 / 636 1	X	"	3,486,425 66

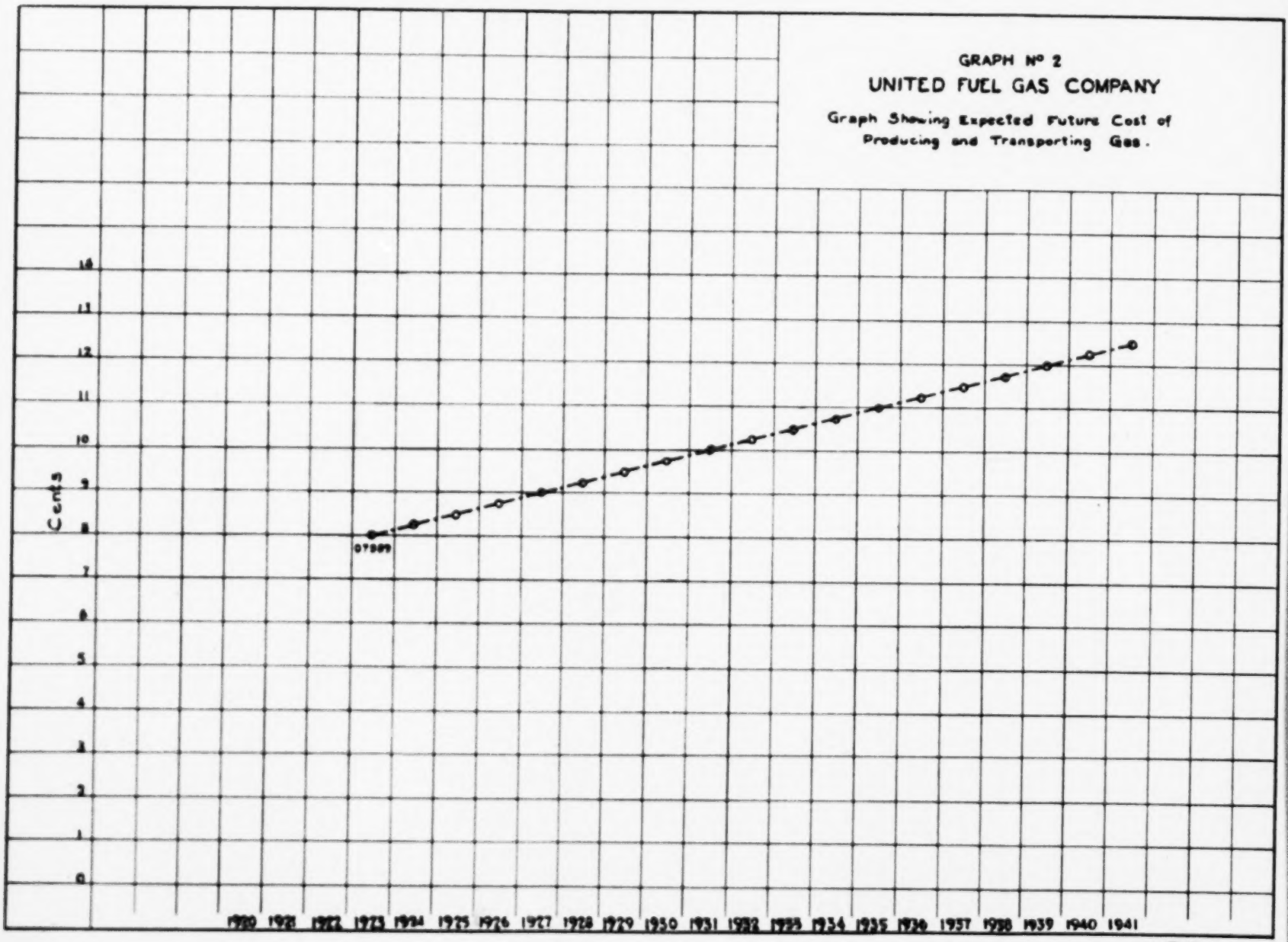
DAVIS EXHIBIT "Z"—Continued

Year	Ratio of production to reserve		Capital sum to be amortized	Amount amortized
1934	40 4 / 636 1	X	"	3,314,155 22
1935	35 2 / 636 1	X	"	2,887,580 79
1936	30 4 / 636 1	X	"	2,493,819 77
1937	25 0 / 636 1	X	"	2,050,838 63
1938	20 6 / 636 1	X	"	1,689,891 03
[fol. 1221]				
1939	20 1 / 636 1	X	$52,181,538 00	$1,648,874 26
1940	19 0 / 636 1	X	"	1,558,637 36
1941	17 7 / 636 1	X	"	1,451,993 75
				52,181,538 00

(Here follow graphs Nos. 1 and 2, marked side folio pages 1222 and 1223)


GRAPH No 1
UNITED FUEL GAS COMPANY
Average Production per Well in each year
Expected
Number Producing Gas Wells end of each year
Expected
80
70
60
50
40
30
20
10
0
1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941

1222


GRAPH Nº 2
UNITED FUEL GAS COMPANY
Graph Showing Expected Future Cost of Producing and Transporting Gas.
Cents
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
07909
1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941

[fol. 1224] MEADOWS EXHIBIT No. 1

Certificate of Valuation

The Huntington Real Estate Board, Huntington, West Virginia

No. 79

We, the undersigned, acting members of the Valuation Committee of The Huntington Real Estate Board, have carefully considered the application of United Fuel Gas Company for a valuation of the following described property: being the value of land only without any improvements thereon.

	Valuation
Parcel No. 1. All that certain piece of parcel of land known as lot No. 25 in block No. 94—30 x 160—814 Fourth Ave., Huntington, W. Va.	$67,250 00
Parcel No. 2. All that certain piece of parcel of land situated at the south west corner of 1st St. & 5th Ave. 168' on 1st St. 106' on 5th Ave. 87' on alley, Huntington, West Va.	11,250 00
Parcel No. 3. All that certain piece of parcel of land situated north east corner of 11th St. West and Railroad Ave. 50' on 11th St. 25' on Railroad Ave., Huntington, West Va. Valuation per front foot $10.00	500 00
Parcel No. 4. All that certain piece of parcel of land situated at north east corner 12th Ave. & 1st St. 194.5' on 12th Ave. 200' on 2nd St. 201.3' on 1st St. and 217.5' on 11½ alley, Huntington, West Va.	20,000 00

	Valuation
Parcel No. 5. All that certain piece of parcel of land situated on the West side of 16th St. Road & Washington Branch and Four Pole 30' on 16th St. and 43' deep, Huntington, West Va. Valuation per front foot $33⅓	1,000 00
Parcel No. 6. All that certain piece of parcel of land situated the East side of Gallia St. 15' on Gallia St. 25' deep, valuation per front foot $16⅔, Huntington W. Va.	250 00
Parcel No. 7. All that certain piece of parcel of land lot No. 12 block 218—30 x 180' 5th Ave. between 22nd and 23rd Sts. Huntington, West Va. Valuation per front foot $66⅔	2,000 00
Parcel No. 8. All that certain piece of parcel of land known as parts of lots No. 12 and 63 Pleasant View Addition 34' on 32nd St. 105' on 3rd Ave. Huntington, W. Va. Valuation per front foot, $50.00	1,700 00
Total	$103,950 00

We hereby certify that we have personally examined said premises, and that we have no personal interest in the property herein valued and that in our opinion said property is worth:—Land $103,950.00.

This is to Certify, that this appraisal was made by the members of the Valuation Committee of The Huntington Real Estate Board whose signatures appear thereon and is issued as an Official Appraisal of The Huntington Real Estate Board.

In Testimony Whereof, witness the signatures of its President and Secretary, this 7th day of March, A. D. 1924.

The Huntington Real Estate Board, (Signed) by H. O. Dunfee, President. H. K. Pancake, Secretary. Valuation Committee: Azel Meadows (Chairman), H. O. Dunfee (Member), C. R. Varnum (Member). (Seal.)

[fol. 1225] GOOD EXHIBIT No. 1

Certificate of Appraisal

The Charleston Real Estate Board, of Charleston, West Virginia, certifies to the United Fuel Gas Company, Charleston, West Virginia, that its appraisal committee, having no personal interest, has inspected the following described property:

Land: Lot 50 x 120 feet, southeastern corner of Quarrier and Dunbar Streets, in the City of Charleston, West Virginia.

Buildings: Not Appraised.

And is of the opinion that the value of the property is as follows:

Present market value of land 50' @ $1,900	$95,000 00
Present market value of buildings	Not appraised.
Total present market value	$95,000 00
Present cash market value of land	$90,000 00
Present cash market value of buildings	Not appraised.
Total present cash market value	$90,000 00

Charleston Real Estate Board, (Signed) by E. Steen, Vice-President. Hugh W. May, Secretary.

Dated March 13th, 1924.

[fol. 1226] GOOD EXHIBIT No. 2

Certificate of Appraisal

The Charleston Real Estate Board, of Charleston, West Virginia, certifies to the United Fuel Gas Company, Charleston, West Virginia, that its appraisal committee, having no personal interest, has inspected the following described property:

Land: Lot 40 x 120 feet at #131 south side Virginia Street (West) in the City of Charleston, West Virginia. (Lot has an alley on side and rear.)

Buildings: Not Appraised.

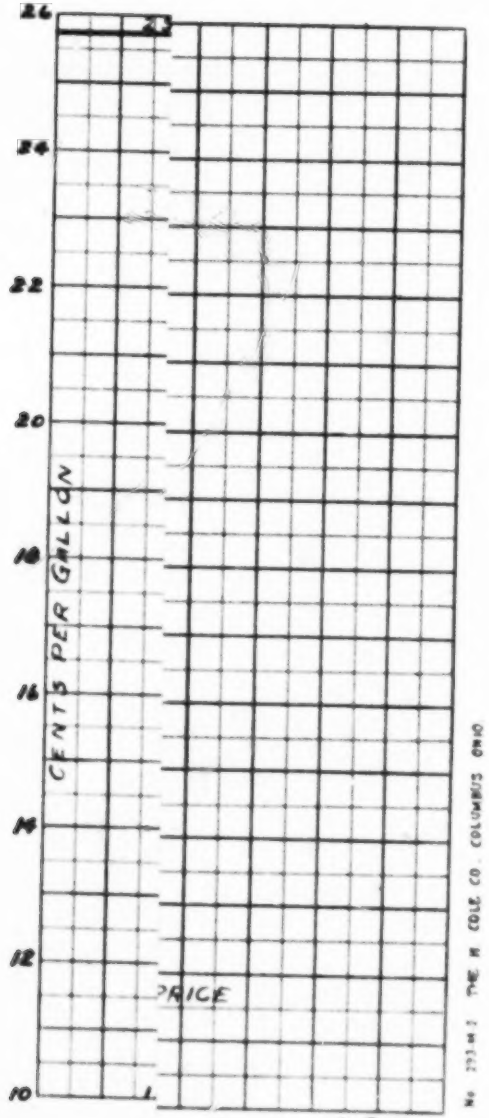
And is of the opinion that the value of the property is as follows:

Present market value of land 40' @ $300	$12,000 00
Present market value of Buildings	Not appraised.
Total present market value	$12,000 00
Present cash market value of land	$11,500 00
Present cash market value of buildings	Not appraised.
Total present cash market value	$11,500 00

Charleston Real Estate Board, (Signed) by E. Steen, Vice President. Hugh W. May, Secretary.

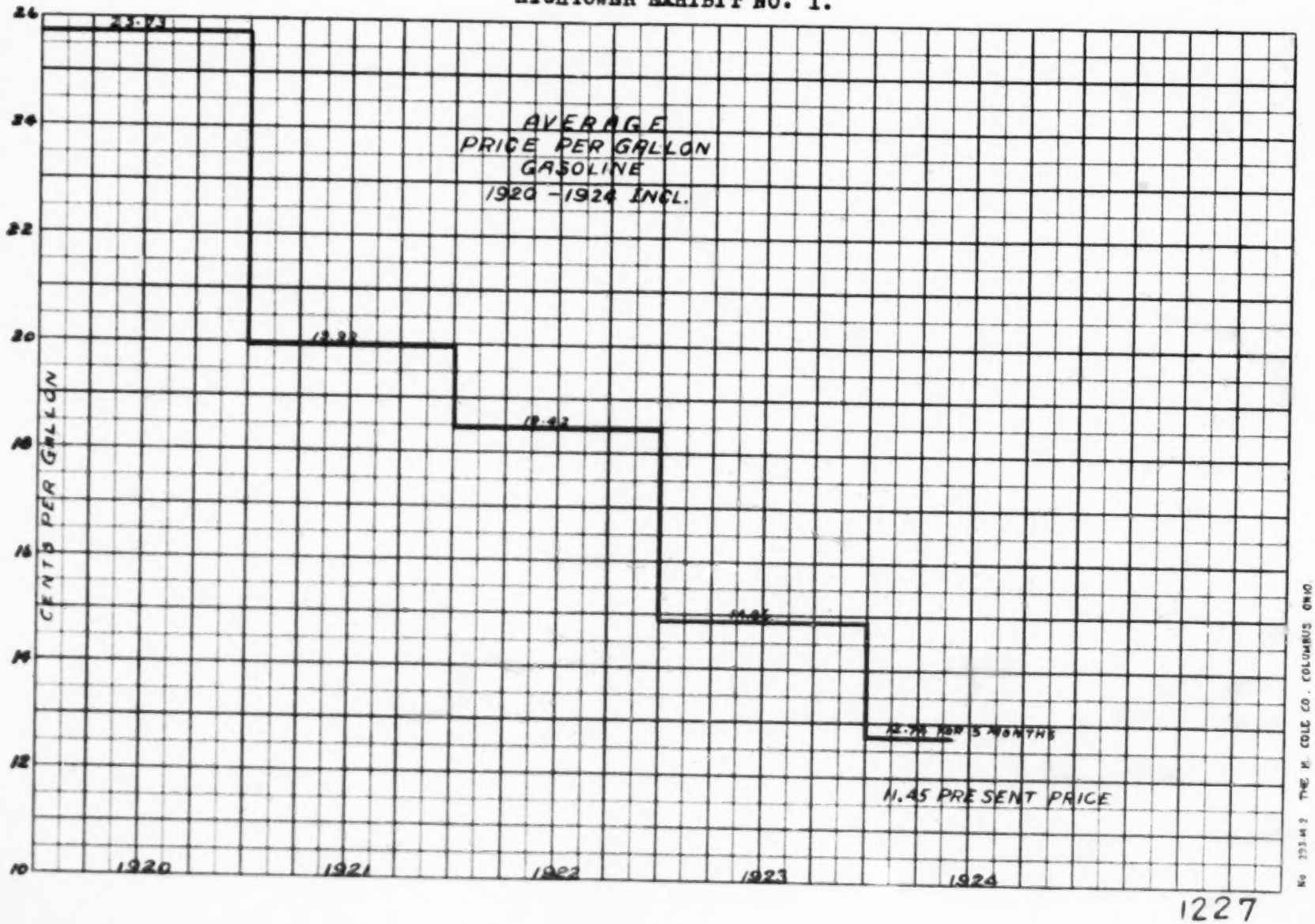
Dated March 13, 1924.

(Here follow Hightower Exhibits Nos. 1 and 1a, marked side folio pages 1227 and 1228)


26
24
22
20
18
16
14
12
10
CENTS PER GALLON
PRICE
THE M COLE CO. COLUMBUS OHIO

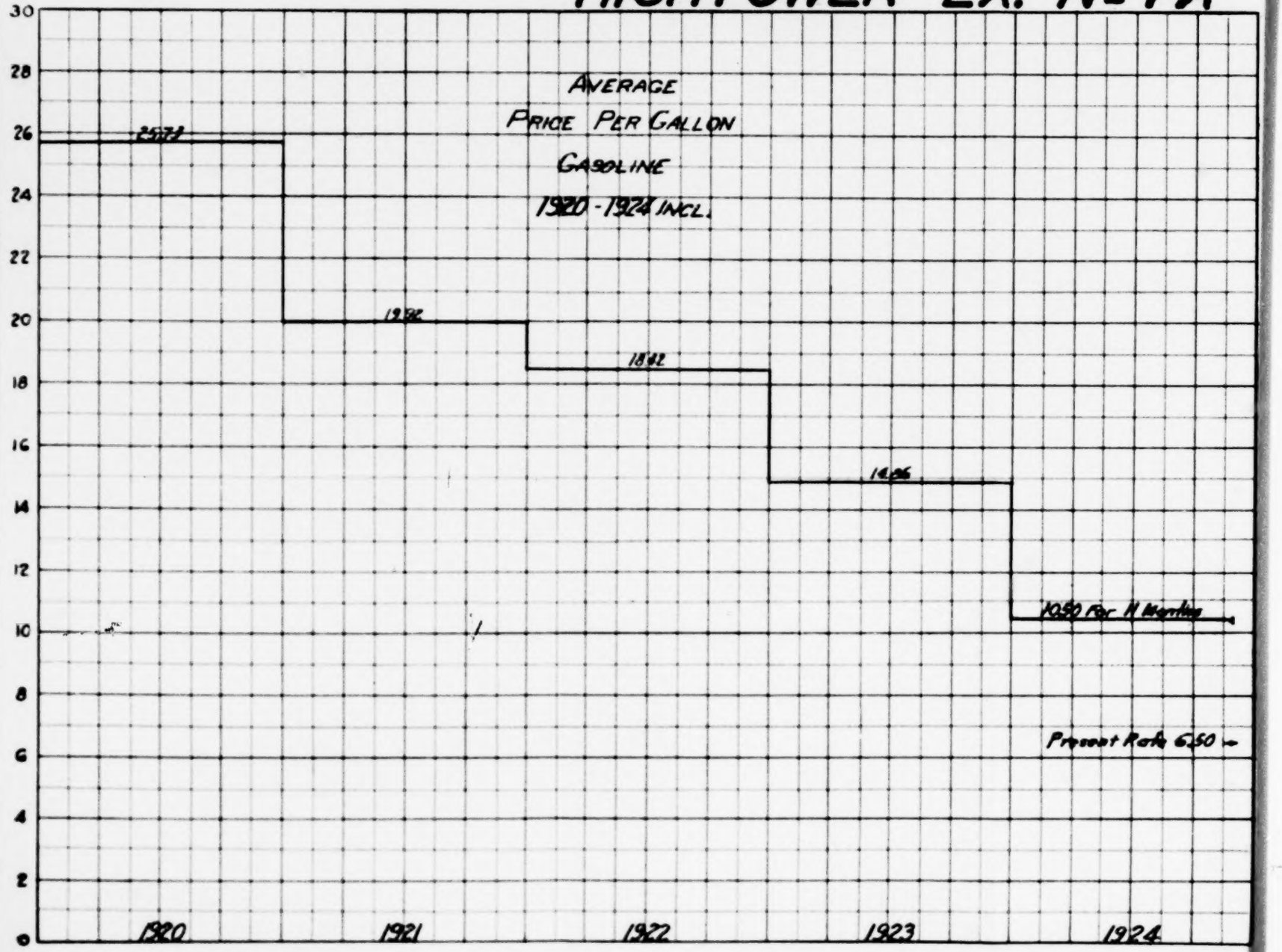
1227

HIGHTOWER EXHIBIT NO. 1.



1227

HIGHTOWER EX. Nº 1-A



1228

[fol. 1229] HIGHTOWER EXHIBIT No 2

United Fuel Gas Company and Warfield Natural Gas Company

Amount of Gas Sold to Various Classes of Consumers and Average Price Received Therefor, 1923 and Year Ending April 30, 1924

	M cu. ft.	Avg. price
Year 1923:		
Domestic	7,886,357	2469
Industrial	7,703,600	2317
Field Operations	1,384,107	0870
Wholesale	30,066,171	1285
Total	47,040,235	1640
Year ending April 30, 1924:		
Domestic	8,334,604	2473
Industrial	7,271,669	2321
Field Operations	1,179,587	0997
Wholesale	29,982,320	1389
Total	46,768,180	1717

HIGHTOWER EXHIBIT No. 2—Continued

Wholesale (Exclusive of sales to Columbia Gas & Electric Co. and the Ohio Fuel Gas Co.):

Year 1923	12,452,998	2073
Year ending April 30, 1924	13,064,345	2243

	Year 1923	Year ending Apr. 30, 1924
Average Domestic Rate in West Va. Cities	2139	2140
Average Industrial Rate " " "	1893	1895
Average Domestic Rate—Cities outside W. Va.	3478	3492
Average Industrial " " " "	3047	3056

In West Va. Cities:

Year 1923	No. of consumers	M cu. ft.	Average rate	Revenue
Domestic	32,566	5,811,644	2139	$1,243,145 14
Industrial	68	4,781,604	1893	904,957 07

In Cities Outside of West Va.:

Domestic	14,440	1,884,283	3478	655,405 78
Industrial	52	1,650,086	3047	502,854 55

(Here follows Hightower Exhibit No. 2a, marked side folio page 1230)

[fol. 1230]

Hightower Exhibit No. 2-A

Gasoline Earnings by Months for First Ten Months 1924

	January	February	March	April	May	June	July	August	September	October
Gross Gasoline Earnings	333,633.84	366,932.46	357,974.93	183,568.81	191,080.74	112,854.72	75,541.22	80,112.20	104,620.19	101,190.52
Operating Expense	90,140.80	86,175.89	81,109.74	80,882.53	60,256.79	47,508.85	38,635.63	45,669.75	52,092.81	64,199.57
General Expense	5,854.03	7,017.49	5,793.90	5,955.60	6,199.24	5,955.75	4,827.89	6,889.69	5,501.23	5,742.74
General Taxes	1,551.23	1,978.21	1,975.71	1,983.17	1,974.84	1,977.34	1,979.60	1,979.14	1,981.16	1,999.41
Bond Interest	3,023.49	3,023.49	2,871.20	2,874.17	2,871.20	2,584.08	2,863.96	2,857.62	2,857.62	2,857.62
1/8th Royalty	37,440.32	40,643.73	33,537.51	31,944.98	22,551.66	13,626.76	8,779.42	9,499.81	11,984.38	13,612.58
Total Expense	138,009.87	138,838.81	125,288.06	123,640.45	93,853.73	71,652.78	57,086.50	66,896.01	74,417.20	88,411.92
Net Earnings (Before Federal Taxes & Depreciation)	195,623.97	228,093.65	232,686.87	59,928.36	97,227.01	41,201.94	18,454.72	13,216.19	30,202.99	12,778.60
Federal Taxes	22,980.79	27,039.50	27,613.66	6,018.17	10,681.17	3,678.04	834.64	179.82	2,303.17	125.12
Depreciation	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61	11,777.61
Net Gasoline Earnings	160,865.57	189,276.54	193,295.60	42,131.91	74,768.23	25,746.29	5,842.47	1,258.76	16,122.21	875.87

[fol. 1231] HIGHTOWER EXHIBIT No. 3

United Fuel Gas Company

Statement of Receipts from Gas Sales, Cities of Huntington and Charleston, by Months, for Year 1923

	Domestic	Industrial	Total
Huntington:			
January	50,387 44	17,819 42	68,206 86
February	51,023 58	8,534 45	59,558 03
March	44,714 77	12,525 12	57,239 89
April	36,019 01	18,790 07	54,809 08
May	20,161 37	19,662 12	39,823 49
June	12,136 75	17,398 00	29,534 75
July	10,459 76	19,849 20	30,308 96
August	11,173 75	14,944 60	26,118 35
September	12,738 73	15,968 40	28,707 13
October	19,716 48	18,458 80	38,175 28
November	38,493 24	15,780 45	54,273 69
December	43,399 75	16,793 00	60,192 75
	350,424 63	196,523 63	546,948 26
Charleston:			
January	89,436 49	44,093 80	133,530 29
February	81,759 94	32,046 85	113,806 79
March	75,597 77	42,872 87	118,470 64
April	61,146 75	43,244 31	104,391 06
May	34,142 92	48,520 16	82,663 08
June	21,558 03	45,352 50	66,910 53
July	19,209 37	44,547 23	63,756 60
August	18,905 18	44,321 00	63,226 18
September	22,101 67	45,130 88	67,232 55
October	35,613 18	49,481 80	85,094 98
November	66,294 33	42,216 68	108,511 01
December	68,654 37	34,671 08	103,325 45
	594,420 00	516,499 16	1,110,919 16

HIGHTOWER EXHIBIT No. 3—Continued

[fol. 1232] United Fuel Gas Company

Statement of Receipts from Gas Sales, Cities of Huntington and Charleston, by Months, for Year Ending April 30, 1924

	Domestic	Industrial	Total
Huntington:			
May, 1923	20,161 37	19,662 12	39,823 49
June	12,136 75	17,398 00	29,534 75
July	10,459 76	19,849 20	30,308 96
August	11,173 75	14,944 60	26,118 35
September	12,738 73	15,968 40	28,707 13
October	19,716 48	18,458 80	38,175 28
November	38,493 24	15,780 45	54,273 69
December	43,399 75	16,793 00	60,192 75
January, 1924	57,817 65	8,056 56	65,874 21
February	55,629 47	9,202 29	64,831 76
March	52,064 75	15,041 39	67,106 14
April	36,858 48	19,564 28	56,442 76
	370,650 18	190,719 09	561,369 27
Charleston:			
May, 1923	34,142 92	48,520 16	82,663 08
June	21,558 03	45,352 50	66,910 53
July	19,209 37	44,547 23	63,756 60
August	18,905 18	44,321 00	63,226 18
September	22,101 67	45,130 88	67,232 55
October	35,613 18	49,481 80	85,094 98
November	66,294 33	42,216 68	108,511 01
December	68,654 37	34,671 08	103,325 45
January, 1924	93,148 38	27,998 70	121,147 08
February	96,925 37	29,420 30	126,345 67
March	85,407 83	34,880 60	120,288 43
April	57,692 02	28,784 94	86,386 96
	619,562 65	475,325 87	1,094,888 52

[fol. 1233]

HIGHTOWER EXHIBIT No. 3-A

United Fuel Gas Company

Statement of Gas Sales and Expenses for Year Ending November 30, 1924

	M c f	Amount	M c f	Amount
Domestic	8,479,200	2,102,087.06	.....	.....
Industrial	5,713,859	1,398,468.26	.....	.....
Field	714,666	71,466.75	.....	.....
Wholesale	29,230,960	4,172,418.10	.....	.....
			44,138,685	7,744,440.17
Misel. Gas Earnings	.....	.....	.....	18,843.09
Gasoline Royalty	.....	.....	.....	267,402.44
				8,030,685.70
Less gas expense:				
Gas Purchased	10,465,521	705,021.87	.....	.....
Production	.....	1,230,732.83	.....	.....
Transmission	.....	621,636.67	.....	.....
Distribution	.....	261,304.64	.....	.....
Commercial	.....	135,293.06	.....	.....
General	.....	274,147.00	.....	.....
General Taxes	.....	495,918.65	.....	.....
Federal Taxes	.....	103,565.39	.....	.....
			10,465,521	3,827,620.11
Net gas earnings (before depletion & depreciation)				4,203,065.59

[fol. 1234]

HIGHTOWER EXHIBIT No. 4

United Fuel Gas Company

Analysis of Miscellaneous Income, West Virginia Distribution Plants, Year 1923

	Shop	Misc.	Total
Charleston	877.37	3,370.69	4,248.06
Huntington	466.30	56.60	522.90
Williamson	.....	36.77	36.77
Spencer	72.76	28.98	101.74
Sundry, W. Va.	61.67	2,401.78	2,463.45
Total	1,478.10	5,894.82	7,372.92

[fol. 1235]

HIGHTOWER EXHIBIT No. 4-A

United Fuel Gas Company

Increase in Capital Expenditures from December 31, 1923, to November 30, 1924

	Distribution	Production	Transmission	Total
Pipe	24,694.62	11,940.21	3,013.64	39,648.47
Casing in Wells	.....	116,709.49	.....	116,709.49
Other Well Construction	.....	290,048.75	.....	290,048.75
Acreage	.....	18,181.75	.....	18,181.75
Rights of Way	11.00	579.56	.....	590.56

Rights of Way Expense	5.00	475.46	373.00	853.46
Buildings	5,353.26	4,255.31	1,563.15	11,171.72
Fittings	1,645.87	1,563.27	399.76	3,608.90
Gate Valves & Other Material	1,037.26	1,118.70	524.87	2,680.83
Labor, Teaming & Freight	16,771.24	14,749.46	3,807.30	35,328.00
Regulators	942.57	50.12	169.29	1,161.98
Teleg. & Telep. Lines	.....	.....	2,280.72	2,280.72
Office Furniture	1,754.90	29.56*	35.73*	1,689.61
Large Tools	630.49	391.12	350.09	1,371.52
Meters	44,166.00	30.42	801.78	44,998.20
Compressor Stations	.....	.....	54,457.59	54,457.59
Measuring Stations	183.73	1,787.69	1,236.16*	735.26
Service Lines	36,078.32	.....	.....	36,078.32
Horses, Wagons, Autos	2,990.71	2,083.93*	2,935.48	3,842.26
Drilling & Co. Tools	.....	707.58	.....	707.58
Cost of Financing	.....	.....	.....	494.50
	136,264.88	460,475.40	69,404.69	666,639.47
Incomplete Construction	8,053.65	531,073.17	794,910.28	1,334,037.10
	144,318.53	991,548.57	864,314.97	2,000,676.57

[*Red in copy.]

[fol. 1230]

EXHIBIT 3, J. C. HIGHTOWER #4 B

United Fuel Gas Company

Increase in Capital Expenditures from December 31, 1923, to December 31, 1924

	Distribution	Production	Transmission	Total
Pipe	33,284.04	213,107.96	101,633.12	348,025.12
Casing in Wells		170,806.06		170,806.06
Other Well Construction		442,351.70		442,351.70
Acreage		28,447.06		28,447.06
Rights of Way	36.00	5,292.37	1,321.37	6,649.74
Rights of Way Expense	5.00	5,487.31	1,191.63	6,683.94
Buildings	10,796.49	4,177.39	10,794.04	25,767.92
Fittings	1,853.76	4,869.58	783.53	7,506.87
Gate Valves & Other Material	1,189.80	3,761.21	2,565.06	7,516.07
Labor, Teaming & Freight	19,411.58	120,737.20	78,553.67	218,702.45
Regulators	1,123.82	50.12	169.29	1,343.23
Telegraph & Telephone			2,394.14	2,394.14
Office Furniture	2,435.93	29.56*	77.62*	2,328.75
Large Tools	819.10	391.12	350.00	1,560.22
Meters	45,594.94	142.55	515.26	46,252.75
Compressor Stations			670,078.28	670,078.28
Measuring Stations	3,035.05	9,204.38	2,129.70	14,369.13
Service Lines	38,347.54			38,347.54

Horses, Wagons, Autos	3,032.58	2,082.93*	2,935.48	3,885.13
Drilling & Co. Tools		1,596.39		1,596.39
Cost of Financing				165.75
	160,365.63	1,008,389.91	875,336.95	2,044,778.24
Incomplete Construction	546.67*	48,858.45	32,029.82	80,341.60
	160,418.96	1,057,168.36	907,366.77	2,125,119.84

[*Red in copy.]

United Fuel Gas Co., Warfield Natural Gas Co., and Cabin Creek Gas Co., Consolidated.

Total Gas Sales and Expenses, Sales and Revenues from West Virginia Cities, Mileage of Transmission Lines, and Total Expenses (Intercompany Items Eliminated) for Years 1921, 1922, 1923, and Year Ending April 30, 1924

	1921	1922	1923	Year ending April 30, 1924
Total Sales, M Cu. Ft.	42,669,113	47,625,222	47,040,235	46,768,180
Less Field Sales, M Cu. Ft.	1,057,989	1,458,377	1,384,107	1,179,587
Gas handled in Transmission	41,611,124	46,166,845	45,656,128	45,588,593
Less Wholesale M Cu. Ft. and Distribution outside W. Va. Cities	32,182,250	36,878,120	35,062,880	34,976,899
West Va. Cities Distribution	9,428,874	9,288,725	10,593,248	10,611,694
West Va. Cities Domestic	4,402,185	5,088,708	5,811,644	6,110,752
West Va. Cities Industrial	5,026,689	4,200,017	4,781,604	4,500,942
Revenues:				
West Va. Cities Domestic Sales	936,975 64	1,081,048 42	1,243,145 14	1,307,423 98
West Va. Cities Industrial Sales	801,012 61	759,964 49	904,957 07	852,888 53
Total Gas Earnings, W. Va. Cities	1,737,988 25	1,841,012 91	2,148,102 21	2,160,327 51
West Va. Cities Miscellaneous Income	1,258 49	5,881 80	7,372 92	5,044 14

West Va. Cities Total Gross Income	1,739,246 74	1,846,894 71	2,155,475 13	2,165,371 65
Mileage of Transmission Lines:				
Major	443 30	444 70	458 00	457 96
Minor	81 90	81 90	81 90	81 90
Total	525 20	526 60	539 90	539 86
Expenses:				
Production	1,284,951 14	1,206,718 85	1,227,672 67	1,243,657 01
Less Gas used in own operation	7,898 62	5,426 88	5,294 93	4,590 82
Net	1,277,052 52	1,201,291 97	1,222,377 74	1,239,066 19
Transmission	514,328 40	565,269 74	600,084 20	600,864 65
Less Gas used in own operation	103,741 41	127,921 05	137,437 25	137,723 11
Net	410,586 99	437,348 69	462,646 95	463,141 54
Distribution	249,289 58	252,445 00	281,434 30	321,771 20
Less Gas used in own operation	972 53	1,112 42	1,294 36	2,785 14
Net	248,317 05	251,332 58	280,139 94	318,986 06

HIGHTOWER EXHIBIT No. 5—Continued

	1921	1922	1923	Year ending April 30, 1924
Total net Production, Transmission and Distribution Expense	1,935,956 56	1,889,973 24	1,965,164 63	2,021,193 79
% of Total Net Production	65 96	63 56	62 20	61 30
% of Total Net Transmission	21 21	23 14	23 54	22 91
% of Total Net Distribution	12 83	13 30	14 26	15 79
General Expenses & Taxes	832,434 42	867,539 60	839,828 50	908,431 45
Gas Purchased, Amount	444,390 13	556,410 38	619,263 69	651,168 66
Gas Purchased, Quantity, M. Cu. Ft.	9,295,038	9,904,135	9,662,753	9,802,927

[fol. 1238]

HIGHTOWER EXHIBIT No. 5-A

United Fuel Gas Company

Statement of Receipts from Gas Sales, Cities of Huntington and Charleston, by Months for Year Ending November 30, 1924

Huntington:	Domestic	Industrial	Total
1923, December	43,399 75	16,793 00	60,192 75
1924, January	57,817 65	8,056 56	65,874 21
February	55,629 47	9,202 29	64,831 76
March	52,064 75	15,041 39	67,106 14
April	36,858 48	19,564 28	56,422 76
May	26,600 05	21,661 89	48,261 94
June	16,172 56	22,385 56	38,558 12
July	10,608 51	16,776 10	27,384 61
August	10,382 82	14,872 01	25,254 83
September	14,265 11	10,123 64	24,388 75
October	19,918 03	7,425 93	27,343 96
November	33,023 35	12,914 84	45,938 19
	376,740 53	174,817 49	551,558 02

HIGHTOWER EXHIBIT No. 5 a—Continued

Charleston:	Domestic	Industrial	Total
1923, December	68,654 37	34,671 08	103,325 45
1924, January	93,148 38	27,998 70	121,147 08
February	96,925 37	29,420 30	126,345 67
March	85,407 83	34,880 60	120,288 43
April	57,602 02	28,784 94	86,386 96
May	39,404 13	24,087 43	63,491 56
June	26,247 27	22,539 02	48,786 29
July	18,464 46	25,575 68	44,040 14
August	18,831 35	21,926 88	40,758 23
September	24,431 81	20,501 54	44,933 35
October	33,156 42	20,014 14	53,170 56
November	57,365 23	21,126 88	78,492 11
	619,638 64	311,527 19	931,165 83

[fol. 1239]

HIGHTOWER EXHIBIT No. Y

United Fuel Gas Company

Statement of Borrowed Money, Years 1909 to 1924, Inclusive

	Cash	Bonds	Total
Year 1909:			
First Nat'l. Bank, New Bethlehem, Pa.	10,000 00		
Peoples Nat'l. Bank, East Brady, Pa.	5,000 00		
First Nat'l. Bank, Clarington, Ohio	5,000 00		
Peoples Nat'l. Bank, Sistersville, W. Va.	5,000 00		
Peoples Nat'l. Bank, Zeninople, Pa.	5,000 00		
First Nat'l. Bank, Emlenton, Pa.	20,000 00		
Brookville Title & Trust Co., Brookville, Pa.	10,000 00		
Clarion Co. Nat'l. Bank, Knox, Pa.	8,000 00		
Western Trust Co., Chicago, Ill.	40,000 00		
" " " " "	5,000 00		
P. A. Myers, Chicago, Ill.	10,000 00		
Union Nat'l. Bank, Pittsburgh, Pa.	100,000 00		
Standard Oil Company, New York	100,000 00		
" " " " "	100,000 00		
			429,000 00
Year 1910:			
Standard Oil Company, New Jersey	510,000 00		
" " " New York	357,000 00		
Ohio Fuel Supply Co., Pittsburgh, Pa.	868,000 00		
			1,735,000 00

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HOOVER EXHIBIT NO. Y—Continued

	Cash	Bonds	Total
Year 1911:			
Standard Oil Company, New York	178,500 00		
" " " New Jersey	101,000 00		
Ohio Fuel Supply Co., Pittsburgh, Pa.	270,500 00		
			550,000 00
Year 1912:			
Standard Oil Company, New Jersey	214,200 00		
Ohio Fuel Supply Co., Pittsburgh, Pa.	205,800 00		
			420,000 00
Year 1913:			
Standard Oil Company, New Jersey	100,000 00		
Treat & Crawford, Pittsburgh, Pa.	50,000 00		
			150,000 00
Year 1914:			
Geo. W. Crawford, Pittsburgh, Pa.	86,750 00		
Standard Oil Company, New Jersey	38,250 00		
			125,000 00
Year 1915:			
Ohio Fuel Supply Co., Pittsburgh, Pa.	36,750 00		
Union Nat'l. Bank, Pittsburgh, Pa.	300,000 00		
A. B. Leach & Co., New York	100,000 00		
			436,750 00
Year 1916:			
A. B. Leach & Co., New York	300,000 00		
Hamilton Nat. Gas Co. (Pur. of Property)	125,000 00		

[fol. 1240]

	January	
Gross Gasoline Earnings	333,633 84	36
Operating Expense	90,140 80	8
General Expense	5,854 03	
General Taxes	1,551 23	
Bond Interest	3,023 49	
1/8th Royalty	37,440 32	4
Total Expense	138,009 87	13
Net Earnings (Before Federal Taxes & Depreciation)	195,623 97	22
Federal Taxes	22,980 79	2
Depreciation	11,777 61	1
Net Gasoline Earnings	160,865 57	18

HIGHTOWER EXHIBIT No. Z

Gasoline Earnings by Months for Year 1924

ruary	March	April	May	June	July	August	September	October	November	December
932 46	357,974 93	183,568 81	191,080 74	112,854 72	75,541 22	80,112 20	104,620 19	101,190 52	133,428 50	179,787 11
175 89	81,109 74	80,882 53	60,256 79	47,508 85	38,635 63	45,669 75	52,092 81	64,199 57	69,067 02	76,893 51
017 49	5,793 90	5,955 60	6,199 24	5,955 75	4,827 89	6,889 69	5,501 23	5,742 74	6,140 77	5,929 92
978 21	1,975 71	1,983 17	1,974 84	1,977 34	1,979 60	1,979 14	1,981 16	1,989 41	1,848 27	874 15
023 49	2,871 20	2,874 17	2,871 20	2,584 08	2,863 96	2,857 62	2,857 62	2,857 62	2,857 62	2,857 62
643 73	33,537 51	31,944 98	22,551 66	13,626 76	8,779 42	9,499 81	11,984 38	13,612 58	16,023 46	20,768 26
838 81	125,288 06	123,640 45	93,853 73	71,652 78	57,086 50	66,896 01	74,417 20	88,411 92	95,937 14	107,323 46
693 65	232,686 87	59,928 36	97,227 01	41,201 94	18,454 72	13,216 19	30,202 99	12,778 60	37,491 36	72,463 65
039 50	27,613 66	6,018 84	10,681 17	3,678 04	834 64	179 82	2,303 17	125 12	3,214 22	7,585 76
777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61	11,777 61
276 54	193,295 60	42,131 91	74,768 23	25,746 29	5,842 47	1,258 76	16,122 21	875 87	22,499 33	53,100 28

Davenport O. & G. Co. (Pur. of Property)	145,000 00		
		*2,387,000 00	
Year 1917:			2,957,000 00
A. B. Leach & Co., New York	370,000 00		
		*1,455,000 00	
Year 1919:			1,825,000 00
Bonds		25,000 00	
Year 1921:			25,000 00
Bonds		#2,000,000 00	
Year 1923:			2,000,000 00
Virginian Gaso. & Oil Co., Charleston	300,000 00		
New York Banks, New York	1,250,000 00		
Year 1924:			1,550,000 00
Virginian Gaso. & Oil Co., Charleston	300,000 00		
		*23,000 00	
			323,000 00
Total			12,525,750 00

*First Mortgage 6% 20 Year Sinking Fund Gold Bonds.
#7½% Secured Gold Bonds.

(Here follows Hightower Exhibit No. Z marked side folio page 1240.)

[fol. 1241] WALLACE EXHIBIT No. 1

Supplemental Agreement Between United Fuel Gas Company & Hope Natural Gas Company, Dated October 31, 1923

[fol. 1242] This agreement, made and entered into this 31st day of October, A. D. 1923, by and between the United Fuel Gas Company, a corporation of West Virginia, (hereinafter called the "Selling Company", party of the first part, and Hope Natural Gas Company, a corporation of West Virginia, (hereinafter called the "Buying Company"), party of the second part;

Witnesseth: That whereas, by a certain written agreement bearing date the 25th day of August, 1916, between the parties hereto, the "Selling Company" agreed to sell and the "Buying Company" agreed to purchase certain quantities of natural gas to be delivered by the "Selling Company" to the "Buying Company" at a point near Cedarville, in Gilmer County, West Virginia, to which point the "Selling Company" agreed to construct a pipe line from its gas fields for the purpose of said agreement which pipe line has since been constructed and natural gas delivered under said agreement since early in the year 1917 until the present time, and

Whereas, certain of the terms, conditions and provisions of the said original agreement of August 25th, 1916, have been changed and modified by an agreement made and entered into by and between the parties hereto bearing date the 1st day of May, 1920, and also by an agreement made and entered into by and between the parties hereto bearing date the 7th day of August, 1922, and

Whereas, the parties hereto have agreed upon a modification of certain of the conditions contained in the said original agreement of August 25th, 1916, relating to the price which shall be paid for the gas delivered during the period hereinafter set forth.

Now, therefore, in consideration of the premises, it is agreed by and between the parties hereto,

First: In lieu of the prices specified in said original and supplemental agreements to be paid by the "Buying Com-

pany" to the "Selling Company," the "Buying Company" will pay for all daily deliveries of gas delivered to it between midnight of July 31st, 1923, and midnight of July 31st, 1924, at the rates and prices following, that is to say: for the first ten (10) million cubic feet per day, 21 cents per thousand cubic feet; for the eleventh million, 22 cents per thousand cubic feet; for the twelfth million, 23 cents per thousand cubic feet; for the thirteenth million, 24 cents per thousand cubic feet; for the fourteenth million, 25 cents per thousand cubic feet for the fifteenth million, 26 cents per thousand cubic feet; for the sixteenth million, 27 cents per thousand cubic feet; for the seventeenth million, 28 cents per thousand cubic feet; for the eighteenth million, 29 cents per thousand cubic feet; for the nineteenth million and all in excess thereof delivered each day, 30 cents per thousand cubic feet, which said rates and prices the "Selling Company" convenants and agrees to accept.

Second. It is further agreed that the said written agreements bearing date respectively, the 25th day of August, 1916, the 1st day of May, 1920, and the 7th day of August, 1922, between the parties hereto, are and shall remain in full force and effect in all of their terms, provisions and stipulations except as hereinbefore expressly modified.

[fol. 1243] Witness the common and corporate seals of the parties hereto duly affixed and attested by their proper officers the day and year first above written.

United Fuel Gas Company, by H. A. Wallace, Vice-President. Attest: M. S. Fouts, Secretary. (Seal.)
Hope Natural Gas Company, by Jno. B. Corrin, Vice President. Attest: S. E. W. Burnside, Secretary. (Seal.)

State of West Virginia,
County of Kanawha, ss:

I, D. C. Jay, a Notary Public of said County of Kanawha, do certify that H. A. Wallace personally appeared before me in my said County and being by me duly sworn, did depose and say that he is the Vice President of the United

Fuel Gas Company, one of the corporations described in the writing above, bearing date the 31st day of October, A. D. 1923, authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, and that the seal affixed to the said writing is the corporate seal of said corporation, and that the said writing was signed and sealed by him in behalf of said corporation by its authority duly given. And the said H. A. Wallace acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and official seal this 12th day of November, A. D. 1923.

D. C. Jay, Notary Public. My commission expires March 2, 1925. (Seal.)

[fol. 1244] State of Pennsylvania,
County of Allegheny, ss:

I, Geo. A. Kinley, a Notary Public of said County of Allegheny, do certify that Jno. B. Corrin personally appeared before me in my said County, and being by me duly sworn, did depose and say that he is the Vice President of Hope Natural Gas Company, one of the corporations described in the writing above, bearing date the 31st day of October, A. D. 1923, authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, and that the seal affixed to said writing is the corporate seal of said corporation, and that the said writing was signed and sealed by him in behalf of said corporation by its authority duly given. And the said Jno. B. Corrin acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and official seal this 14th day of November, A. D. 1923.

Geo. A. Kinley, Notary Public. My commission expires March 25, 1925. (Seal.)

[fol. 1245] WALLACE EXHIBIT No. 2.

Supplemental Agreement Between United Fuel Gas Company & Pittsburgh & West Virginia Gas Company, Dated November 12, 1923

[fol. 1246] This agreement, made this 12th day of November, A. D. 1923, by and between the United Fuel Gas Company, a corporation of West Virginia, hereinafter called "United Company," party of the first part, and the Pittsburgh and West Virginia Gas Company, also a West Virginia corporation, hereinafter called "Pittsburgh Company," party of the second part,

Witnesseth

That whereas by certain agreement dated the 25th day of August, 1916, between the parties hereto, United Company agreed to sell to Pittsburgh Company and deliver to it at a point near Cedarville, Gilmer County, West Virginia, certain quantities of natural gas, and Pittsburgh Company agreed to purchase the same upon the terms and conditions therein agreed upon, which contract is now in effect between the parties, and certain quantities of natural gas have been and are now being delivered and accepted thereunder; and

Whereas by certain supplemental agreements the price to be paid for gas delivered under the above contract has been from time to time changed; and whereas the United Company now requests the Pittsburgh Company to increase the price to be paid for gas under said agreement for the year beginning August 1, 1923, and has agreed to expend money enlarging its producing capacity and increasing the delivery of gas to Pittsburgh Company, which the Pittsburgh Company is willing to agree to upon certain conditions.

Now, therefore, this agreement witnesseth: That in consideration of mutual covenants and agreements herein contained, the parties hereto agree with each other as follows:

The Pittsburgh Company agrees that it will pay

First. For all gas delivered to it by the United Company under the terms of the contract of August 25th, 1916, for

the period beginning August 1, 1923 and ending July 31st, 1924, at the following rates, which are in lieu of the rates agreed upon under said contract and supplemental contracts for the period above mentioned only:

For the fifteenth million cubic feet per day, at the rate twenty-one cents per thousand cubic feet.

For the eleventh million cubic feet per day, at the rate of twenty-two cents per thousand cubic feet.

For the twelfth million cubic feet per day, at the rate of twenty-three cents per thousand cubic feet.

For the thirteenth million cubic feet per day, at the rate of twenty-four cents per thousand cubic feet.

For the fourteenth million cubic feet per day, at the rate of twenty-five cents per thousand cubic feet.

For the fifteenth million cubic feet per day, at the rate of twenty-six cents per thousand cubic feet.

For the sixteenth million cubic feet per day, at the rate of twenty-seven cents per thousand cubic feet.

For the seventeenth million cubic feet per day, at the rate of twenty-eight cents per thousand cubic feet.

[fol. 1247] For the eighteenth million cubic feet per day, at the rate of twenty-nine cents per thousand cubic feet.

For the nineteenth million cubic feet per day, and for all gas in excess of nineteen million cubic feet per day, at the rate of thirty cents per thousand cubic feet.

It is understood and agreed by the parties hereto that the increased rate herein agreed upon shall be effective only as to gas delivered between midnight on the 31st day of July, 1923 and midnight on the 31st day of July, 1924, and that thereafter the rate for gas delivered shall be the rate fixed under said contract of August 25, 1916.

Second. In consideration of the payment by Pittsburgh Company of the increased rate or price for gas above agreed upon, United Company agrees to make certain expenditures in order to increase its production and its supply of gas to Pittsburgh Company during the winter months of said year.

Third. Except as herein modified, all the terms and conditions of the said agreement of August 25, 1916 are and shall remain in full force and effect between the parties,

and the said terms and conditions, as well as the terms and conditions of this agreement, shall extend to the successors and assigns of the parties.

In witness whereof the parties hereto have caused their respective corporate seals to be hereto affixed and duly attested, the day and year first above written.

United Fuel Gas Company, by H. A. Wallace, Vice-President. Attest: M. S. Fouts, Secretary. (Seal.) Pittsburgh & West Virginia Gas Company, by A. Hurlburt, Vice President. Attest: W. W. Washabaugh Asst. Secretary. (Seal.)

[fol. 1247½] State of West Virginia,
County of Kanawha, To wit:

I, D. C. Jay, a Notary Public of said County of Kanawha, do certify that H. A. Wallace, personally appeared before me in my said County, and being by me duly sworn according to law, did depose and say that he is the Vice President of the United Fuel Gas Company, one of the corporations described in the foregoing writing, bearing date the 12th day of November, 1923, authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, and that the seal affixed to said writing is the corporate seal of said corporation, and that said writing was signed and sealed by him in behalf of said corporation by its authority duly given. And the said H. A. Wallace acknowledged the said writing to be the act and deed of said corporation.

Given under my hand and notarial seal, this 12th day of November, A. D. 1923.

D. C. Jay, Notary Public. My Commission expires March 2, 1925. (Seal.)

State of Pennsylvania,
County of Allegheny, To wit:

I, John L. Hauser, a Notary Public of said County of Allegheny, do certify that A. Hurlburt personally appeared before me in my said County, and being by me duly sworn according to law, did depose and say that he is the Vice

President of the Pittsburgh & West Virginia Gas Company, one of the corporations described in the foregoing writing, bearing date the 12th day of November, 1923, authorized by said corporation to execute and acknowledge deeds and other writings of said corporation, that the seal affixed to said writing is the corporate seal of said corporation, and that said writing was signed and sealed by him in behalf of said corporation by its authority duly given; and the said A. Hurlburt acknowledged the said writing to be the act and deed of said corporation.

Given under by hand and notarial seal this 12th day of November A. D. 1923.

John L. Hauser, Notary Public. My commission expires March 7, 1925. (Seal.)

[fol. 1248] WALLACE EXHIBIT No. 3

United Fuel Gas Company

Amount Collected as Minimum Charges, Year 1923, in City of Charleston, W. Va., Domestic Only

Month	Minimum charges	Total payments
January	$77 80	$89,713 05
February	78 40	81,708 15
March	101 85	75,259 83
April	124 20	60,634 33
May	279 28	34,067 60
June	618 81	21,466 74
July	807 52	19,237 20
August	868 89	19,115 95
September	608 73	21,987 19
October	277 60	35,873 83
November	96 95	66,584 62
December	96 75	69,456 63
Total	4,036 78	595,105 12
Per cent minimum charge of total payments		0 678%

[fol. 1249] WALLACE EXHIBIT No. 4

United Fuel Gas Company

Amount of Gas Purchased, Year 1923 and Eleven Months of 1924

	1923, M c. f.	11 mo 1924, M c. f.
Anderson Oil & Gas Co	64,345	36,366
Barnhart & Taylor #177		117,818
Barnhart & Taylor #188	185,317	118,440
Blackshere Oil & Gas Co	148,353	111,625
Belvard Oil & Gas Co	206,489	175,652
Byrne, W. E. R	25,658	15,487
Carter Oil Co	79,954	67,360
Cassis & Namay	17,857	13,246
Central Wayne Oil & Gas Co	96,390	71,931
Charleston Clendenin Oil & Gas Co.	122,163	99,070
Columbian Carbon Co	20,719	17,716
Cabot, G. L		65,938
Carte & Shaffer		2,548
Davis & Davis	22,321	30,504
Davis & Davenport	11,797	27,432
Davis, L. G	370,179	601,897
East Lynn Oil & Gas Co	48,117	34,321
Elkins, Richard	875,284	850,966
Empire Petroleum Co	744,544	559,565
Falling Rock Cannel Coal Co	985,757	810,028
Frazier, J. E. et al	425,054	312,985
Gassoal Oil Co	339,507	180,380
Goshorn Oil Co	18,247	28,134
Jackson Co., J. O	234,769	383,560
Kanawha City Oil & Gas Co	607,282	443,928
Miller, Jeff et al	20,764	30,915
Meteor Carbon Co	137,276	129,215
Morley Oil & Gas Co		81,070
McCray, D. D	2,593	1,296
McCormick, Millson	47,251	46,868
Ohio Fuel Oil Co	999,156	922,662
Pilgrim Oil Co	42,626	16,297
Priddie Oil & Gas Co	76,808	60,995
Poca Fork Oil & Gas Co		43,420
Coal State Gas Co		4,892

WALLACE EXHIBIT No. 4—Continued

	1923 M c f	11 mo 1924 M c f
Shelton Gasoline Co	318,886	2,943
South Penn Oil Co	166,080	72,942
Stonewall Oil & Gas Co	53,154	34,274
Silman, Peter	59,503	30,132
Sahley & Skaff	106,633	87,334
Summers, Earl		22,405
Turley, C. J	46,480	27,979
Transylvania Oil & Gas Co	494,870	707,776
Walker Oil Co	29,391	122,048
Weideman, Carl J	68,666	50,627
Williamson & Carnes	205,272	134,983
Waldron, M. H	114,999	97,887
Westova Oil & Gas Co	200,855	153,012
Davis, L. G. #197		93,137
Jackson, J. O. #199		10,370
Davis & Davis—Porters		14,959
Murphy, John	38,944	34,698
Pilgrim Oil Co. Ky	15,370	26,385
Union Gas & Oil Co	673,087	783,236
Big Darby Oil & Gas Co		24,229
O'Connell Oil Co	87,896	
Rogers, A. M	5,072	
Welsh & Loman	6,292	
Total	9,667,857	9,045,884

[fol. 1256] PEIRCE EXHIBIT No. 1

Public Gas Corporation

Investment Expenditures, Two Years Ended April 30, 1924

Physical Property:		
Drilling and Development	$138,631 36	
Machinery and Equipment	18,859 87	
Pipe Lines	30,791 70	
Compressor Plant	55,663 22	
Miscellaneous	651 80	
Superior Oil & Gas Co.—Wells	123,500 00	
Total Physical Property		$368,097 95

PEIRCE EXHIBIT No. 1—Continued

Investment Leases:		
Superior Oil & Gas Co.—Leases	118,500 00	
Leases	1,053 21	
Total Leases		119,553 21
Total Investment		487,651 16
Engineering & Superintendence	13,511 38	3 66%
Administration	12,689 74	3 45
Interest on Physical Property	41,226 97	11 20
Pre-Construction Costs	20,896 67	5 68
Legal Expense	14,796 38	4 02
Insurance & Taxes	5,329 34	1 45
Cost of Financing	25,887 43	7 03
Total	$134,337 91	36 50%
Interest on Leases Purchased	13,350 96	11 20%

[fol. 1251] JAY EXHIBIT 3 J. C. No. 1

Unoperated fee gas acreage held by United Fuel Gas Company:		
Calhoun County	4 07	
Clay County	8,116 65	
Jackson County	26 16	
Kanawha County	5,221 38	
Mingo County	787 87	
Roane County	12,980 83	
Wayne County	11,008 00	
		38,144 96
Operated fee gas acreage held by United Fuel Gas Company:		
Clay County	589 00	
Jackson County	32 25	
Kanawha County	339 81	
Mingo County	490 00	
Roane County	2,147 05	
		3,410 11
Grand Total		41,555 07

[fol. 1252] Unoperated Acreage Held under Lease at Delay Rental of 25 Cents per Acre

Counties	Number of leases	Acreage as to gas well royalties $50.00	$100.00	$150.00	$200.00	$250.00	$300.00
Kanawha	1						
	3	250				2,080	

[fol. 1253] Unoperated Acreage Held under Lease at Delay Rental of 50 Cents per Acre

Counties	Number of leases	Acreage as to gas well royalties $100.00	$150.00	$200.00	$250.00	$300.00
Boone	9					
	4			834 00		
Clay	7					599 00
	1			400 75		
Kanawha	4	403				22 40
	1					
	8		417			35 00
	7			394 50		
Lincoln	1			109 50		
Mason	47					5,369 00
Raleigh	36					4,387 70
Wayne	1			40 00		
Roane	1	60				
		463	417	1,778 75		10,413 10

Jay Exhibit 3 J. C. No. 1—Continued

[fol. 1254] Unoperated Acreage Held under Lease at Delay Rental of 75 Cents per Acre

Counties	Number of leases	Acreage as to gas well royalties $125.00	$150.00	$200.00	$250.00	$300.00
Kanawha	1	1,221				
	2				8,697	

[fol. 1255] Unoperated Acreage Held under Lease at Delay Rental of $1.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties $100.00	$150.00	$200.00	$250.00	$300.00
Boone	3			3,664		
	2				136	
	44					30,663 75
Cabell	218					18,330 51
	15			1,038 50		
	3				483	
Clay	8			9,151 50		
	1				100	
	143					20,270 36
Braxton	6					863 00
Fayette	1					4,000 00

Jackson	22		1,690 00		
	8			704	
	380				36,120 00
Kanawha	2	42			
	100		46,463 00		
	37			8,248½	
	4				45,611 75
Lincoln	4		312 00		
	2			110 00	
	7				992 00
Logan	31				3,304 00
Mingo	21				2,724 75
	39		6,053 20		
Nicholas	15				1,431 00
Putnam	10		671 00		
	265				22,135 42
	4			466 00	
Raleigh	1		225 00		
Wayne	39				2,998 00
Wirt	21				1,325 00
Roane	125				9,150 07
	4			730 00	
		42	69,268 20	10,977 50	199,922 61

Jay Exhibit 3 J. C. No. 1—Continued

[fol. 1256] Unoperated Acreage Held under Lease at Delay Rental of $1.50 per Acre

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$150.00	$200.00	$250.00	$300.00
Boone	1					66 25
Clay	1			50		
Kanawha	4			26		
	3					400 00
Lincoln	15					1,091 00
				76 00		1,557 25

[fol. 1257] Unoperated Acreage Held under Lease at Delay Rental of $2.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$150.00	$200.00	$250.00	$300.00
Cabell	2					137 50
Clay	3			433 03		
	14					581 67
Jackson	1				7 00	
	9					325 61
Kanawha	11			280 00		
	2				250 00	
	17					1,099 75
Lincoln	7					230 75

Logan	1					
Mingo	3		7 68			8 00
Roane	41					
	1					2,251 86
	1	250 00		95 00		
		250 00	7 68	808 03	257 00	4,635 14

[fol. 1258] Unoperated Acreage Held under Lease at Delay Rental of $2.50 per Acre

		Acreage as to gas well royalties				
Counties	Number of leases	$100 00	$150 00	$200 00	$300 00	$500 00
Kanawha	1					
Roane	3				17 25	1,600 00

[fol. 1259] Unoperated Acreage Held under Lease at Delay Rental of $3.00 per Acre

		Acreage as to gas well royalties		
Counties	Number of leases	$200 00	$250 00	$300 00
Kanawha	7	24 25		
Roane	1		5 00	
	12			746 46

[fol. 1260] Unoperated Acreage Held under Lease at Delay Rental of $4.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties, $300.00
Roane	5	679 67

Jay Exhibit 3 J. C. No. 1—Continued

[fol. 1291] Unoperated Acreage Held under Lease at Delay Rental of $5.00 per Acre

County	Number of leases	Acreage as to gas well royalties $200.00
Roane	6	24.00
Kanawha	4	3.50
	3	18.50
		46.00

[fol. 1292] Unoperated Acreage Held under Lease at Delay Rental of $10.00 per Acre

County	Number of leases	Acreage as to gas well royalties $200.00
Clay	2	1.50
Kanawha	5	10.00
Roane	5	47.00
		58.50

[fol. 1293] Unoperated Acreage Held under Lease at Delay Rental of $20.00 per Acre

County	Number of leases	Acreage as to gas well royalties $200.00
Roane	3	10.00

[fol. 1264] Unoperated Acreage Held under Lease at Delay Rental of $40.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties	
		$250.00	$300.00
Kanawha	2		1 50
	1	50	

[fol. 1265] Unoperated Acreage Held under Lease at Delay Rental of $100.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$150.00	$200.00	$250.00	$300.00
Jackson	2					3 00
Kanawha	1					4 75
	4			97 75		
	11					75 75
Roane	1				1 50	
	1				40 50	
	22					821 80
				97 75	42 00	905 30

JAY EXHIBIT 3 J. C. No. 1—Continued

[fol. 1266] Unoperated Acreage Held under Lease at Delay Rental of $150.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$150.00	$200.00	$250.00	$300.00
Jackson	17		320 30			
	2			15 50		
	2				11 50	
	17					317 75
Kanawha	9		83 45			
	22					317 95
Clay	4					108 50
Roane	7					174 50
			473 75	15 50	11 50	918 70

[fol. 1267] Unoperated Acreage Held under Lease at Delay Rental of $200.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties			
		$150.00	$200.00	$250.00	$300.00
Clay	2				59 00
Jackson	1			94	
	1				58 00
Kanawha	8				

Roane	18		204 00		
	12		325 50		502 04
	3				
	54			71 00	
					1,398 78
			529 50	71 94	2,617 82

[fol. 1268] Unoperated Acreage Held under Lease at Delay Rental of $250.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties			
		$100.00	$200.00	$250.00	$300.00
Jackson	1			19 00	
Kanawha	1		47 25		
	4			139 34	
Roane	13				636 68
	9		365 62		
	15				804 30
			412 87	158 34	1,440 98

[fol. 1269] Unoperated Acreage Held under Lease at Delay Rental of $300.00 per Tract

Counties	Number of leases	$200.00	$250.00	$300.00
Clay	1	40 00		
Jackson	8			367 00
	87			4,485 00
	1		4 00	

JAY EXHIBIT 3 J. C. No. 1—Continued

Counties	Number of leases	Acreage as to gas well royalties		
		$200.00	$250.00	$300.00
Kanawha	2	245 00		
	2		156 00	
	139			5,766 14
	5 Lots			5 Lots
Lincoln	1	60 00		
Putnam	1			70 00
Roane	2			86 00
	592			17,654 85
	4		316 00	
		345 00	476 00	28,428 99
				5 Lots

[fol. 1270] Unoperated Acreage Held under Lease at Delay Rental of $250.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties			
		$100.00	$200.00	$250.00	$300.00
Roane	2				164 00

[fol. 1271] Unoperated Acreage Held under Lease at Delay of Rental of $400.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties				
		$100.00	$200.00	$250.00	$300.00	$400.00
Jackson	1					10 22
Kanawha	11				1,022 29	

Roane	19		1,634 85	
			2,657 14	10 22

[fol. 1272] Unoperated Acreage Held under Lease at Delay Rental of $500.00 per Tract

Counties	Number of acres	Acreage as to gas well royalties			
		$100.00	$200.00	$250.00	$300.00
Roane	9				1,418 00

[fol. 1273] Unoperated Acreage Held under Lease at Delay Rental of $600.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties, $300.00
Jackson	9	1,696 00
Kanawha	1 Tract	97 00
Roane	30 Tracts	4,364 25
		6,157 25

[fol. 1274] Unoperated Acreage Held under Lease at Delay Rental of $900.00 per Tract

Counties	Number of leases	Acreage as to gas well royalties			
		$100.00	$200.00	$250.00	$300.00
Roane	2	.....	.....	.....	529 00

JAY EXHIBIT J. C. No. 1—Continued

[fol. 1275] Unoperated Acreage Held under Lease at Delay Rental of $1,000.00 per Tract

County	Number of leases	Acreage as to gas well royalties $200.00
Kanawha	1	200.00
Roane	1	18.75
		218.75

[fol. 1276] Unoperated Acreage Held under Lease at Delay Rental of $1,300.00 per Tract

County	Number of leases	Acreage as to gas well royalties $200.00
Roane	2	706.69

[fol. 1277] Unoperated Acreage Held under Lease at Delay Rental of 50 Cents per Acre

County	Number of acres	Acreage as to gas well royalties 12½ per M
Raleigh	2	280.44

[fol. 1278] Unoperated Acreage Held under Lease at Delay Rental of $2.00 per Acre

County	Number of leases	Acreage as to gas well royalties			
		1/16 per M	1/8 per M	1/6 per M	1/5 per M
Boone	1			3,000.00	
Lincoln	1				770.00

Fayette	1				
Jackson	1			709 36	
Nicholas	1		417 25		
Putnam	4				9,938 30
Boone	1	6,515 00			365 00
		6,515 00	417 25	3,709 36	11,073 30

[fol. 1279] Unoperated Acreage Held under Lease at Delay Rental of $3.00 per Acre

County	Number of leases	Acreage as to gas-well royalties 8/16 per M
Clay	2	864 56
	1	84 10
		948 66

[fol. 1280] Unoperated Acreage Held under Lease at Delay Rental of $5.00 per Acre

County	Number of leases	Acreage as to gas-well royalties 1/8 per M	Acreage as to gas-well royalties 1/6 per M
Kanawha	2	1,159 50	
	1		116 00

1067

JAY EXHIBIT 3 J. C. No. 1—Continued

[fol. 1281] Acreage Held under Lease Without Rental on Account of Oil Production

County	Number of acres	Acreage as to gas well royalties
Kanawha	2	125.00 A. at $50.00 per well.
Roane	1	50.00 A. " 50.00 " "
Kanawha	21	1,228.25 A. " 100.00 " " 175 A. @ $50.00
Lincoln	5	530.00 A. " 100.00 " "
Roane	32	4,008.00 A. " 100.00 " " 5,856.25 A. @ $100.00
Jackson	2	70.00 A. " 150.00 " "
Kanawha	13	412.25 A. " 150.00 " "
Roane	5	381.25 A. " 150.00 " " 863.50 A. @ $150.00
Jackson	6	698.00 A. " 200.00 " "
Kanawha	60	9,186.75 A. " 200.00 " "
Lincoln	10	1,207.00 A. " 200.00 " "
Roane	49	6,204.10 A. " 200.00 " " 28,163.85 A. @ $200.00
Jackson	1	9.38 A. " 250.00 " "
Kanawha	13	29,494.00 A. " 250.00 " "
Lincoln	1	51.00 A. " 250.00 " "
Roane	64	6,079.00 A. " 250.00 " " 35,633.44 A. @ $250.00
Jackson	10	260.00 A. " 300.00 " "
Kanawha	25	6,817.75 A. " 300.00 " "
Clay	1	1,049.50 A. " 300.00 " "
Lincoln	7	754.00 A. " 300.00 " "
Roane	68	1,970.37 A. " 400.00 " " 10,851.52 A. @ $300.00
Kanawha	9	704.00 A. " 400.00 " " 704.00 A. @ $400.00

[fol. 1282]

Operated Acreage Held under Lease on Account of Gas Operation

Counties	Number of leases			Acreage as to gas well royalties
Kanawha	5	174 72 A. @	$50 00 per well.	174 72 A. @ $50 00
Logan	1	450 00 A. "	100 00 " "	
Mingo	6	1,025 00 A. "	100 00 " "	
Kanawha	17	1,538 25 A. "	100 00 " "	3,013 25 A. @ $100 00
	1	400 00 A. "	125 00 " "	400 00 A. @ $125 00
Boone	5	1,912 00 A. "	150 00 " "	1,912 00 A. @ $150 00
Clay	2	916 00 A. "	200 00 " "	
Jackson	4	550 00 A. "	200 00 " "	
Lincoln	18	2,324 00 A. "	200 00 " "	
Logan	1	415 00 A. "	200 00 " "	
Putnam	2	2,396 00 A. "	200 00 " "	
Wayne	1	184 00 A. "	200 00 " "	
Kanawha	2	42 00 A. "	200 00 " "	
Boone	53	3,557 00 A. "	200 00 " "	10,784 00 A. @ $200 00
Clay	2	296 00 A. "	300 00 " "	
Jackson	3	279 00 A. "	300 00 " "	
Lincoln	12	1,133 75 A. "	300 00 " "	
Logan	1	100 00 A. "	300 00 " "	
Putnam	2	313 50 A. "	300 00 " "	
Kanawha	1	100 00 A. "	300 00 " "	
	51	4,046 75 A. "	300 00 " "	6,179 00 A. @ $300 00
	2	347 00 A. "	350 00 " "	347 00 A. @ $350 00
	6	1,843 00 A. "	400 00 " "	1,843 00 A. @ $400 00
	4	679 35 A. "	450 00 " "	679 35 A. @ $450 00

JAY EXHIBIT 3 J. C. No. 1—Continued

Counties	Number of leases	Acreage as to gas well royalties			
Kanawha	5	771 00 A.	at	500 00	per well 771 00 A. @ $500 00
	2	115 18 A.	"	550 00	" " 115 18 A. @ $550 00
Jackson	2	285 00 A.	"	600 00	" "
Kanawha	5	595 00 A.	"	600 00	" " 880 00 A. @ $600 00
	1	368 00 A.	"	900 00	" " 368 00 A. @ $900 00
	3	1,938 00 A.	"	1,000 00	" " 1,938 00 A. @ 1,000 00
	2	1,710 00 A.	"	1,250 00	" " 1,710 00 A. @ 1,250 00

[fol. 1283] Unoperated Acreage Held under Lease at Delay Rental of $1.00 per Acre

Counties	Number of leases	Acreage as to gas well royalties
Boone	1	5,733 81 acres @ 3/4¢ per M.
	1	8,724 00 " " 5/8¢ per M.
	1	33 00 " " 1¢ per M.
Jackson	1	165 00 " " 1 1/2¢ per M.
Kanawha	1	500 00 " " 5/8¢ per M.
	4	29,290 00 " " 1 1/2¢ per M.
	1	109 00 " " 1¢ per M.
	1	2,000 00 " " 1/8¢ per M. Gas
Raleigh	2	48,172 15 " " 1 1/2¢ per M.

5,733 81 A. @ 3/4¢ per M.	500 00 " " 5/8¢ per M.	
8,724 00 " " 5/8¢ per M.	109 00 " " 1¢ per M.	
33 00 " " 1¢ per M.	2,000 00 " " 1/8¢ per M.	
77,660 15 " " 1 1/2¢ per M.		

LEASE No.....

OIL AND GAS LEASE

FROM

.....

.....

TO

.....

Incorporated

Date..... 192..

Term of Years.....

No. Acres.....

On the Waters of.....

District.....

County.....

State of.....

Received.....

at..... O'clock, ...M

Recorded..... 192....

in.....County, ...

Record of Leases, Vol.....Page.....

.....

Recorder.
County Clerk.

Clerk's Fee, $.....

Recorder's Fee, $.....

U. L. D. 141 1M 11-24

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____heirs or assigns, free of cost in tanks or the pipe line to which said lessee may connect its wells, a royalty of_____the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay, in lieu of the customary annual rental for the use of gas from gas wells, a royalty or compensation, for all gas taken by the lessee from the above described premises (other than casinghead gas from oil wells), of one (1) cent per thousand cubic feet, said gas to be measured by orifice or other meter of standard type, and the volume of the same computed on a ten (10) ounce pressure basis above 14.7 pounds atmospheric; and when measured through orifice or pitot tube, computation of the same shall be based on a temperature of forty (40) degrees (Fahrenheit) flowing and fifty (50) degrees storage, according to Boyle's Law for the measurement of gas at varying pressures, but without allowance for changes in temperature and barometric conditions from the aforesaid basis. Payment of the amount due, at the rate aforesaid, for such gas shall be made on or before the twentieth (20th) day of each month for the gas taken during the preceding month, and such payment shall constitute the entire consideration to the lessor for such gas, including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of_____

($_____) Dollars, quarterly in advance, beginning in_____months from this date, until, but not after a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege.

Payment of all moneys herein named or due under this lease may be made by cash or check to_____

_____, or by deposit to_____credit in the_____

_____Bank of_____, or by check made payable to_____

order and mailed to_____at_____P. O._____

County, State of_____, who is hereby appointed Agent of the parties of the first part for such purposes.

Lessor may lay a line to any gas well on said land and take gas produced from said well for_____own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first two hundred thousand cubic feet of gas so taken each year shall be free, but all gas in excess of two hundred thousand cubic feet taken in each year shall be paid for by the lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

_____

_____

_____

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be full surrender and termination of this lease.

AGREEMENT, Made and entered into the.....day of....., A. D. 192.....

by and between.....

.....

.....

.....

.....

of.....County of..... and State of.....

part..... of the first part hereinafter called the Lessor and the.....
a West Virginia Corporation party of the second part hereinafter called the Lessee.

WITNESSETH That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise unto the said Lessee for the purpose of mining and operating for oil and gas, and of laying pipe lines, and building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and separately and neighboring lands, ALL that certain tract of land situate in.....

District..... County and State of West Virginia, on the waters of .....bounded substantially as follows:

On the North by lands of.....

On the East by lands of.....

On the South by lands of.....

On the West by lands of.....

Containing.....acres, more or less, but no well shall be drilled by either party nearer than.....feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee for the production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, free of cost, in tanks or the pipe line to which said lessee may connect its

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

WITNESS:

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....(SEAL) .....

.....

By.....Vice-President.

STATE OF WEST VIRGINIA,

COUNTY OF..... } to-wit:

I, ... a.....

of said county of.....do certify that.....

and.....his wife, whose name.....signed to the within writing,

bearing date the.....day of....., A. D., 19....., ha..... this day acknowledged the same before me in my said County.

Given under my hand this.....day of....., A. D., 19.....

My commission expires.....

.....

.....

STATE OF WEST VIRGINIA,

COUNTY OF..... } to-wit:

I, ... a.....

of said county of.....do certify that.....

and.....his wife, whose name.....signed to the within writing,

bearing date the.....day of....., A. D., 19....., ha..... this day acknowledged the same before me in my said County.

Given under my hand this.....day of....., A. D., 19.....

My commission expires.....

.....

.....

AGREEMENT, Made and entered into the _____ day of _____ A. D., 192__

by and between _____

of _____ County of _____ and State of _____

of the first part, hereinafter called the Lessor and the UNITED FUEL GAS COMPANY, a West Virginia Corporation, party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents do grant, demise, lease and let, with covenants of quite possession and sole right so to grant and demise, unto the said Lessee for the purpose of mining and operating for oil and gas, and of laying pipe lines, and building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in _____ District, _____ County, and State of West Virginia on the waters of _____

bounded substantially as follows:

On the North by lands of _____

On the East by lands of _____

On the South by lands of _____

On the West by lands of _____

Containing _____ acres, more or less, but no well shall be drilled by either party, except by mutual consent, within _____ feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from _____ and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost in tanks or the pipe line to which said lessee may connect its wells, a royalty of _____ the equal one-eight (⅛) part of all oil produced and saved from the leased premises; and, 2nd—to pay _____ a royalty of _____

($ _____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well then Lessee shall pay at the rate of twenty five dollars annually for the gas from each oil well so utilized.

STATE OF WEST VIRGINIA,

COUNTY OF _____ } **to-wit:**

I, _____, a _____

of said county of _____ do certify that _____

and _____ his wife, whose name _____ signed to the within writing bearing date the _____ day of _____ A. D. 19_____, ha_____ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____ A. D. 19_____

My commission expires _____

STATE OF WEST VIRGINIA,

COUNTY OF _____ } **to-wit:**

I, _____, a _____

of said county of _____ do certify that _____

and _____ his wife, whose name _____ signed to the within writing bearing date the _____ day of _____ A. D. 19_____, ha_____ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____ A. D. 19_____

My commission expires _____

the Lessor, ... heirs or assigns, free of cost in tanks or the pipe line to which said lessee may connect its wells, a royalty of ..... the equal one-eight (⅛) part of all oil produced and saved from the leased premises; and, 2nd—to pay ..... a royalty of .....

($ .....) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well then Lessee shall pay at the rate of twenty five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of .....

($ .....) Dollars, quarterly in advance, beginning in ..... months from this date, until, but not after a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege. This lease is not to go into effect or replace a prior lease dated ....., now held by the Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Payments of all moneys herein named or due under this lease may be made by cash or check to .....

..... or by deposit to ..... credit in the ..... Bank of ....., or by check made payable to ..... order and mailed to ..... at ..... P. O., ... County, State of ..... who is hereby appointed Agent of the parties of the first part for such purposes.

Lessee may lay a line to any gas well on said land and take gas produced from said well for ..... own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first two hundred thousand cubic feet of gas so taken each year shall be free, but all gas in excess of two hundred thousand cubic feet taken in each year shall be paid for by the lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

.....

.....

.....

.....

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that recordation of a deed of surrender in the proper county, and the mailing to the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The convenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

.....

.....

.....

.....

.....

.....

.....

.....

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

UNITED FUEL GAS COMPANY,

By .....

Vice President.

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 192 __, ha__ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____, A. D., 192 __

My commission expires _____

_____

_____

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 192 __, ha__ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____, A. D., 192 __

My commission expires _____

_____

_____

LEASE NO.

OIL AND GAS LEASE

FROM

TO

UNITED FUEL GAS COMPANY
INCORPORATED

Date 192

Term of Years .....

No. Acres .....

On the Waters of .....

District .....

County .....

State of .....

Received .....

at ..... O'clock. M.

Recorded 192

in ..... County.

Record of Leases, Vol. ..... Page .....

Recorder.
County Clerk.

Clerk's Fee, $ .....

Recorder's Fee, $ .....

Form U. L. D. 116 10-27 5575

1830

by and between.....

.....

.....

of.....County of.....and State of.....part.....
of the first part, hereinafter called the Lessor and the UNITED FUEL GAS COMPANY, a West Virginia Corporation, party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents does grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise, unto the said Lessee, for the purpose of mining and operating for oil and gas, and of laying pipe lines, and building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in.....

District, ...County, and State of West Virginia on the waters of.....
bounded substantially as follows:

On the North by lands of.....

On the East by lands of.....

On the South by lands of.....

On the West by lands of.....

Containing .....acres, more or less, but no well shall be drilled by either party, except by mutual consent, within.....feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term of payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, ... heirs or assigns, free of cost, in the pipe line to which said Lessee may connect its wells, a royalty of .....the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay.....a royalty of.....
($.....) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well while so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of.....

the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well while so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of..... .....

($.....) Dollars, quarterly in advance, beginning in.....months from this date, until, but not after, a well yielding royalty to the Lessor is drilled on the leased premises, any rental paid for them beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil and gas is produced.

It is agreed that said Lessee may drill or not drill on said land, as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege.

Payments of all moneys herein named or due under this lease may be made by cash or check to..... .....or by deposit to.....credit in the.....Bank of..... or by check made payable to.....order and mailed to..... at.....P. O. .....County, State of.....who is hereby appointed Agent of the parties of the first part for such purpose.

Lessor may lay a line to any gas well on said land and take gas produced from said well for.....own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first two hundred thousand cubic feet of gas so taken each year shall be free, but all gas in excess of two hundred thousand cubic feet taken in each year shall be paid for by the Lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

....

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises, and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that the recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

.....(Seal)

UNITED FUEL GAS COMPANY,

By.....

Vice President.

STATE OF WEST VIRGINIA,

COUNTY OF.....} to wit:

I, ..., a.....

of said County of.....do certify that.....

and.....his wife, whose name.....signed to the within writing,

bearing date the.....day of....., A. D. 192...., ha.....this day acknowledged the same before me in my said County.

Given under my hand this.....day of....., A. D. 192....

My commission expires.....

.....

.....

STATE OF WEST VIRGINIA,

COUNTY OF.....} to wit:

I, ..., a.....

of said County of.....do certify that.....

and.....his wife, whose name.....signed to the within writing,

bearing date the.....day of....., A. D. 192...., ha.....this day acknowledged the same before me in my said County.

Given under my hand this.....day of....., A. D. 192....

My commission expires.....

.....

.....

1038

LEASE No.

OIL AND GAS LEASE

FROM

TO

UNITED FUEL GAS CO.

Incorporated

Dated ..... 19....

Terms of Years.....

In Acres .....

In the Waters of.....

District .....

County.....

State of.....

Received.....

at.....O'clock .....M

Recorded..... 192....

in.....County.....

Record of Leases Vol..... Page.....

Recorder
County Clerk

Clerk's Fee $.....

Recorder's Fee. $.....

U. L. D. 134 2M 10-25

AGREEMENT, Made and entered into the _____ day of _____, A. D., 192____ by and between _____

_____

_____

of _____ County of _____ and State of _____ part _____ of the first part, hereinafter called the Lessor and _____ party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents do grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise, unto the said Lessee for the purpose of mining and operating for oil and gas, and of laying pipe lines, and building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in _____ District, _____ County, and State of West Virginia on the waters of _____ bounded substantially as follows:

On the North by lands of _____

On the East by lands of _____

On the South by lands of _____

On the West by lands of _____

Containing _____ acres, more or less, but no well shall be drilled by either party, except by mutual consent, within _____ feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st.—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost in the pipe line to which said lessee may connect its wells, a royalty of _____ the equal one-eighth (⅛) part of all oil produced and saved from the leased premises and, 2nd—to pay _____ a royalty of _____ ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of _____

premises and, 2nd—to pay ..... a royalty of .....

($.....) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well and shall constitute the entire consideration to lessor for such gas including the gasoline and other contents thereof. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of .....

($.....) Dollars, quarterly in advance, beginning in ..... months from this date, until, but not after, a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land, as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege.

Payments of all moneys herein named or due under this lease may be made by cash or check to .....

..... or by deposit to ..... credit in the ..... Bank

of ....., or by check made payable to ..... order and mailed

to ..... at ..... P. O., ... County,

State of ..... who is hereby appointed Agent of the parties of the first part for such purpose.

Lessor may lay a line to any gas well on said land and take gas produced from said well for ..... own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first two hundred thousand cubic feet of gas so taken each year shall be free, but all gas in excess of two hundred thousand cubic feet taken in each year shall be paid for by the Lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

.....

.....

.....

.....

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that the recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

..... (Seal)

..... (Seal)

..... (Seal)

..... (Seal)

..... (Seal)

..... (Seal)

By .....

Vice-President.

-69317-

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 192___, ha _____ this day acknowledged the same before
me in my said County.

Given under my hand this _____ day of _____, A. D., 192___

My commission expires _____

_____

_____

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 192___, ha _____ this day acknowledged the same before
me in my said County.

Given under my hand this _____ day of _____, A. D., 192___

My commission expires _____

_____

_____

LEASE NO.

AND GAS LEASE

FROM

TO

, 192

Years

Waters of

O'clock, M.

, 192

County,

of Leases, Vol. Page

Recorder.
County Clerk.

Fee, $

r's Fee, $

134½ 1M 7-22

Agreement, Made and entered into the _____ day of _____, A. D., 19____,
by and between _____

_____

_____

_____

of _____ County of _____ and State of _____,
part____ of the first part, hereinafter called the Lessor, and the UNITED FUEL GAS COMPANY, a West Virginia corporation, party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents do____ grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise, unto the said Lessee, for the purpose of mining and operating for oil and gas, and of laying pipe lines, and of building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in _____
District, _____ County, and State of West Virginia, on the waters of _____
_____ bounded substantially as follows:

On the North by lands of _____

On the East by lands of _____

On the South by lands of _____

On the West by lands of _____

Containing _____ acres, more or less, but no well shall be drilled by either party, except by mutual consent, within _____ feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost, in the pipe line to which said Lessee may connect its wells, a royalty of the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay a royalty of _____
_____ ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost, in the pipe line to which said Lessee may connect its wells, a royalty of the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay a royalty of _____ _____ ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of its intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in its operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of _____ ($_____) Dollars, quarterly in advance, beginning in _____ months from this date, until, but not after, a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land, as it may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege. This lease is not to go into effect or replace a prior lease, dated _____ now held by the Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

All payments hereunder may be made direct to the Lessor, or deposited to the credit of Lessor, in _____ _____, or by check payable and mailed to _____ at _____ Post Office, _____ County, State of West Virginia, or in any of said methods to _____, who is hereby appointed agent to receive and receipt for the same.

Lessor may lay a line to any gas well on said land and take gas produced from said well for _____ own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first one hundred fifty thousand cubic feet of gas so taken in each year shall be free, but all gas in excess of one hundred fifty thousand cubic feet taken in each year shall be paid for by the Lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

_____

_____

_____

_____

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that the recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be a full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

_____ _____ (Seal)

_____ _____ (Seal)

_____ _____ (Seal)

_____ _____ (Seal)

UNITED FUEL GAS COMPANY,

_____ By _____

_____

LEASE No. _____

OIL AND GAS LEASE

FROM

_____

_____

TO

UNITED FUEL GAS CO.

(Incorporated)

Date _____ 19__

Term of Years _____

No. Acres _____

On the Waters of _____

District _____

County _____

State of _____

Received _____

at _____ o'clock, ____ M.

Recorded _____, 19__

in _____ County, _____

Record of Leases, Vol. _____ Page _____

_____

Recorder,
County Clerk.

Clerk's Fee, $ _____

Recorder's Fee, $ _____

W. L. D. 191

Given under my hand this _____ day of _____, A. D., 19__

Given under my hand this _____ day of _____, A. D., 19__

My commission expires _____

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 19____, ha__ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____, A. D., 19____.

My commission expires _____

_____

_____

STATE OF WEST VIRGINIA,
COUNTY OF _____ } to-wit:

I, _____, a _____
of said County of _____ do certify that _____
and _____ his wife, whose name _____ signed to the within writing,
bearing date the _____ day of _____, A. D., 19____, ha__ this day acknowledged the same before me in my said County.

Given under my hand this _____ day of _____, A. D., 19____.

My commission expires _____

Made and entered into the _____ day of _____, A. D., 19____,

by and between _____

_____

_____

_____

_____

of _____ County of _____ and State of _____,

part _____ of the first part, hereinafter called the Lessor, and _____

_____ party of the second part, hereinafter called the Lessee.

WITNESSETH: That the said Lessor, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and of the covenants hereinafter contained on the part of the said Lessee, to be paid, kept and performed, has granted, demised, leased and let and by these presents do _____ grant, demise, lease and let, with covenants of quiet possession and sole right so to grant and demise, unto the said Lessee, for the purpose of mining and operating for oil and gas, and of laying pipe lines, and of building tanks, stations, telephone, telegraph and electric power lines, houses for gates, meters and regulators, with all other rights, privileges, appliances and structures necessary, incident or convenient for the operation of this land alone and conjointly with neighboring lands, ALL that certain tract of land situate in _____

District, _____ County, and State of West Virginia, on the waters of _____

_____ bounded substantially as follows:

On the North by lands of _____

On the East by lands of _____

On the South by lands of _____

On the West by lands of _____

Containing _____ acres, more or less, but no well shall be drilled by either party, except by mutual consent, within _____ feet of the dwelling house or barn now on said premises.

It is agreed that this lease shall remain in force for the term of ten years from this date, and as long thereafter as the said land is operated by the Lessee in the search for or production of oil or gas, with an extended term by payment of rentals as hereinafter set forth.

IN CONSIDERATION OF THE PREMISES, the said Lessee covenants and agrees: 1st—To deliver to the credit of the Lessor, _____ heirs or assigns, free of cost, in the pipe line to which said Lessee may connect his wells, a royalty of the equal one-eighth (⅛) part of all oil produced and saved from the leased premises; and, 2nd—To pay a royalty of _____ _____, ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of his intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in his operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be freely used by the Lessee for farming purposes, excepting such acres as are

_____ ($_____) Dollars each three months in advance for the gas from each and every gas well drilled on said premises while gas is marketed and used therefrom off said premises, until the Lessee shall give written notice to the Lessor of his intention to abandon the well, or shall, in fact, plug and abandon the same. Said payments shall commence within sixty days after the completion of each such well. It is agreed, however, that gas produced from oil wells may be taken by Lessee for fuel in his operation on and in the vicinity of said premises, free of charge, but if gasoline be extracted therefrom or other use made of the gas from such well, then Lessee shall pay at the rate of twenty-five dollars annually for the gas from each oil well so utilized.

The leased premises may be fully and freely used by the Lessor for farming purposes, excepting such parts as are used by the Lessee in operating hereunder.

The said Lessee covenants and agrees to pay a rental at the rate of_____

($_____) Dollars, quarterly in advance, beginning in_____months from this date, until, but not after, a well yielding royalty to the Lessor is drilled on the leased premises; any rental paid for time beyond the date of completion of a gas well shall be credited upon the first royalty due upon the same; upon the drilling of a dry well yielding no royalty to the Lessor, the Lessee may continue to hold the leased premises for such further term as the Lessee may desire upon the payment of said rental, not exceeding the term of five years after the expiration of the term above mentioned and as long thereafter as oil or gas is produced.

It is agreed that said Lessee may drill or not drill on said land, as he may elect, and that the consideration and rentals paid and to be paid constitute adequate compensation for such privilege. This lease is not to go into effect or replace a prior lease, dated_____now held by the Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

All payments hereunder may be made direct to the Lessor, or deposited to the credit of Lessor, in_____, or by check payable and mailed to_____ at_____Post Office, _____County, State of West Virginia, or in any of said methods to_____, who is hereby appointed agent to receive and receipt for the same.

Lessor may lay a line to any gas well on said land and take gas produced from said well for_____own use for heat and light in one dwelling house on said land at Lessor's own risk, subject to the use, operation, pumping and right of abandonment of the well by the Lessee; the first one hundred fifty thousand cubic feet of gas so taken in each year shall be free, but all gas in excess of one hundred fifty thousand cubic feet taken in each year shall be paid for by the Lessor at the current published local rates of the Lessee, and measurement and regulation shall be by meter and regulators set at the tap on the well or line. This privilege is upon condition that the Lessor shall use said gas with economy, in safe and proper pipes and appliances, and shall subscribe to and be bound by the reasonable rules and regulations of the Lessee published at such time relating to such use of gas.

_____

_____

_____

_____

It is agreed that said Lessee is to have the privilege of using sufficient water and gas from the said premises to run all machinery necessary for drilling and operating thereon, and at any time to remove all machinery and fixtures placed on said premises; and further, upon the payment of One Dollar, at any time, by said Lessee, to the Lessor, or to the above named agent, said Lessee, shall have the right to surrender this lease to them or either of them for cancellation, after which all payments and liabilities thereafter to accrue under and by virtue of its terms shall cease and determine, and this lease become absolutely null and void. Lessor agrees that the recordation of a deed of surrender in the proper county, and the mailing in the Post Office of a check payable as above provided, for said last mentioned sum and all amounts then due hereunder, shall be a full surrender and termination of this lease.

All terms, conditions, limitations and covenants between the parties hereto shall extend to their respective heirs, successors, personal representatives and assigns. The covenants herein on behalf of the "Lessor" are the joint and several covenants of each of the parties of the first part.

WITNESS the following signatures and seals the day and year first above written.

Witness:

_____ _____(Seal)

_____ _____(Seal)

_____(Seal)

_____ _____(Seal)

_____ _____(Seal)

LEASE No. _____

OIL AND GAS LEASE

FROM

_____

_____

TO

Date _____ 19__

Term of Years _____

No. Acres _____

On the Waters of _____

District _____

County _____

State of _____

Received _____

at _____ o'clock, _____ M.

Recorded _____ 19__

in _____ County, _____

Record of Leases, Vol. _____ Page _____

_____

Recorder,
County Clerk.

Clerk's Fee, $_____

Recorder's Fee, $_____

Given under my hand this _____ day of _____, A. D., 19__

My commission expires _____

hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a West Virginia Corporation, hereinafter called the Lessee;

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, on the part of the said party of the second part, to be paid, kept and performed, ha.... granted, demised, leased and let, and by these presents do.... grant, demise, lease and let unto the said party of the second part, its successors and assigns, for the sole and only purpose and with the exclusive right of mining and operating for oil and gas, and of using free of charge from any well thereon sufficient gas for drilling and operating upon the same, and of laying pipe lines, and of building tanks, stations and structures thereon, to take care of the said products, all that certain tract of land situate in.....District .....County, and State of West Virginia, on the waters of..... ....., bounded substantially as follows:

On the North by lands of.....
On the East by lands of.....
On the South by lands of.....
On the West by lands of.....
containing .....acres, more or less,
including lands conveyed to Lessor by.....
by deed dated....., and recorded in said County records in Deed Book..... page.....

TO HAVE AND TO HOLD said premises for the said purpose for and during the term of twenty (20) years from ....., and as long thereafter as oil or gas is produced from said land.

No well to be drilled within.....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of one-eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of..... Dollars ($.....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damage to growing crops on said land.

Lessor shall be entitled to use free of cost for heat and light in one dwelling on said premises from any gas well thereon.

premises, and to pay for each gas well while the gas is sold therefrom the sum of.....
Dollars ($.....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damage to growing crops on said land.

Lessor shall be entitled to gas free of cost for heat and light in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same, and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatsoever. Lessee is to have free of charge the waste and casing head gas from oil wells, and water from the premises to use on or off the said premises for its oil and gas operations, and the right to operate and maintain pipe lines and surface rods to and from adjoining lands, and Lessee shall have the right at any time to remove all machinery, material and fixtures which it may place on said premises.

This lease is not to go into effect or merge or replace a prior lease dated ....., now held on said land by said Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Lessee agrees to drill a well on said premises by.....
or pay to Lessor.....Dollars ($.....) each .....
thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any gas well rental. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the Bank herein below named the sum of.....Dollar..., and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returing it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the County Clerk's Office of.....County, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to.....
.....or by deposit to.....credit in the .....Bank
of ....., or by check made payable to.....order and mailed
to ..... at .....P. O., ...County,
State of..... who is hereby appointed Agent of the parties of the first part for such purpose.
.....
.....

This grant and demise, with all of its terms and conditions shall extend to and bind the respective heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, We, the parties hereto, have hereunto set our hands and seals the day and year first above written.

Witness:

.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)

Attest:

.....
Secretary.

UNITED FUEL GAS COMPANY,
(Incorporated)

By.....
President.

STATE OF WEST VIRGINIA }
COUNTY OF ..... } to-wit:

I, ... a

of said County of ..... do certify that .....

and ..... his wife, whose names are signed to the within writing, bearing

date the ..... day of ..... A. D. 19....., ha... this day acknowledged the

same before me in my said County.

Given under my hand and notarial seal this ..... day of ..... A. D. 19....

.....

.....

My Commission expires the ..... day of ..... A. D. 19....

STATE OF WEST VIRGINIA }
COUNTY OF ..... } to-wit

I, ... a

of said County of ..... do certify that .....

and ..... his wife, whose names are signed to the within writing, bearing

date the ..... day of ..... A. D. 19....., ha... this day acknowledged the

same before me in my said County.

Given under my hand and notarial seal this ..... day of ..... A. D. 19....

.....

.....

My Commission expires the ..... day of ..... A. D. 19....

No

GAS LEASE

From

To

FUEL GAS Co.

(Incorporated)

19

o'clock, M

19

County

, Vol Page

Recorder

County Clerk

$

$

THIS AGREEMENT, Made and entered into this ..... day of ....., A. D., 191...,

between .....

.....

.....

.

..... for the same purpose for the said term of twenty (20) years from

....., and as long thereafter as oil or gas is produced from said land.

No well to be drilled within ..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One Eighth (1/8) of all oil produced and saved from premises, and to pay for each gas well while the gas is sold therefrom the sum of ..... Dollars ($ .....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damage to growing crops on said land.

Lessor shall be entitled to gas free of cost for heat and light in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same, and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatsoever. Lessee is to have free of charge the waste and casing head gas from oil wells, and water from the premises to use on or off the said premises for its oil and gas operations, and the right to operate and maintain pipe lines and surface rods to and from adjoining lands, and Lessee shall have the right at any time to remove all machinery, material and fixtures which it may place on said premises.

This lease is not to go into effect or merge or replace a prior lease dated ....., now held on said land by said Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Lessee agrees to drill a well on said premises by ..... or pay to Lessor ..... Dollars ($ .....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the nd of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any gas well rental. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the Bank herein below named the sum of ..... Dollar ..., and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the County Clerk's Office of ..... County, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check, to .....; or by deposit to ..... credit in The ..... Bank of ..... or by check made payable to ..... order and mailed to ..... at ..... P. O., ... County, State of ....., who is hereby appointed Agent of the parties of the first part for such purpose .....

This grant and demise, with all of its terms and conditions shall extend to and bind the respective heirs, executors, administrators, successors and assigns of the parties hereto.

In Witness Whereof, We, the parties hereto, have hereunto set our hands and seals the day and year first above written.

Witness:

.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)

STATE OF WEST VIRGINIA,
COUNTY OF ..... } to-wit:

I, ... a .....
of said County of ..... do certify that .....
and ..... his wife, whose names are signed to the within writing, bearing date the .....day of .....A. D. 19...., ha.... this day acknowledged the same before me in my said County.

Given under my hand and notarial seal this .....day of .....A. D. 19....

.....

.....

My Commission expires the .....day of .....A. D. 19....

STATE OF WEST VIRGINIA,
COUNTY OF ..... } to-wit:

I, ... a .....
of said County of .....do certify that .....
and ..... his wife, whose names are signed to the within writing, bearing date the ..... day of .....A. D. 19...., ha....this day acknowledged the same before me in my said County.

Given under my hand and notarial seal this.....day of .....A. D. 19....

.....

.....

My Commission expires the.....day of .....A. D. 19....

Lease No. .....

Oil and Gas Lease

From

.....

.....

To

.....

.....

.....

.....

.....

.....

hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a West Virginia Corporation, hereinafter called the Lessee;

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, on the part of the said party of the second part to be paid, kept and performed, ha...., granted, demised, leased and let, and by these presents do.... grant, demise, lease and let unto the said party of the second part, its successors and assigns, for the sole and only purpose and with the exclusive right of mining and operating for oil and gas, and of using free of charge from any well thereon sufficient gas for drilling and operating upon the same, and of laying pipe lines, and of building tanks, stations and structures thereon, to take care of the said products, all that certain tract of land situate in ..... District .....County, and State of West Virginia, on the waters of..... ....., bounded substantially as follows:

On the North by lands of .....

On the East by lands of.....

On the South by lands of .....

On the West by lands of.....

containing .....acres, more or less,

including lands conveyed to Lessor by.....

by deed dated....., and recorded in said County records in Deed Book..... page.....

TO HAVE AND TO HOLD said premises for the said purpose for and during the term of twenty (20) years from and after the date hereof, and as long thereafer as oil or gas is produced from said land.

No well to be drilled within.....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of one-eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of..... .....Dollars ($.....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damage to growing crops on said

.....Dollars ($.....) each three months. Said payments to begin within sixty days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee shall conduct its operations in such manner as to do no unnecessary damages to growing crops on said land.

Lessor shall be entitled to gas free of cost for heat and light in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same, and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatsoever. Lessee is to have free of charge the waste and casing head gas from oil wells, and water from the premises to use on or off the said premises for its oil and gas operations, and the right to operate and maintain pipe lines and surface rods to and from adjoining lands, and Lessee shall have the right at any time to remove all machinery, material and fixtures which it may place on said premises.

Lessee agrees to drill a well on said premises within.....from this date or pay to Lessor .....Dollars ($.....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any gas well rental. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the Bank herein below named the sum of ..... Dollar...., and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the County Clerk's Office of.....County, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to..... .....or by deposit to.....credit in the .....Bank of ....., or by check made payable to.....order and mailed to ..... at .....P. O., ... County, State of ..... who is hereby appointed Agent of the parties of the first part for such purpose.

.....

.....

This grant and demise, with all of its terms and conditions shall extend to and bind the respective heirs, executors, administrators, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, We, the parties hereto, have hereunto set our hands and seals the day and year first above written.

Witness:

.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)
.....	.....(Seal)

Attest:

.....
Secretary.

UNITED FUEL GAS COMPANY,
(Incorporated)

By.....
President.

STATE OF WEST VIRGINIA,
COUNTY OF..... } to wit:

I, ... a .....
of said County of..... do certify that .....
and ..... his wife, whose names are signed to the within writing
bearing date the ..... day of..... A. D. 19...., ha.... this day acknowledged the
same before me in my said County.

Given under my hand and notarial seal this ..... day of ..... A. D. 19....

.....

.....

My commission expires the..... day of..... A. D. 19 ....

STATE OF WEST VIRGINIA,
COUNTY OF..... } to wit:

I, ... a .....
of said County of..... do certify that .....
and ..... his wife, whose names are signed to the withing writing
bearing date the ..... day of ..... A. D. 19.., ha.... this day acknowledged the
same before me in my said County.

Given under my hand and notarial seal this..... day of ..... A. D. 19 ....

.....

.....

My commission expires the ..... day of ..... A. D. 19....

Lease No.....

OIL and GAS LEASE

From

.....

.....

To

UNITED FUEL GAS CO.
(Incorporated)

Date ..... 19....

Term of Years.....

No. Acres .....

On the Waters of.....

District .....

County .....

State of .....

Received .....

at ..... o'clock..... M.

Recorded ..... 19....

in..... County, ...

Record of Leases, Vol.....Page.....

.....

Recorder

County Clerk

Clerk's Fee. $.....

Recorder's Fee. $.....

0287

THIS AGREEMENT, Made and entered into this .....day of .....
A. D. 191....., between .....
.....
.....
.....

hereinafter called the Lessor, and .....hereinafter called the Lessee;

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, does hereby grant unto the Lessee for the term of twenty years and so long thereafter as oil or gas is produced from the land leased, and royalty and rentals paid by Lessee therefor, all the oil and gas in and under the lands hereinafter described, together with the exclusive right to drill for, produce and market said oil and gas, and to possess so much of said lands as may be necessary or convenient to such operations, the right to use oil, gas and water from said lands in operations thereon and the right to remove, at any time, any and all property placed by Lessee in or upon said premises, and Lessor waives the right to claim or hold during or after the term hereof any of said property as fixtures or as a part of the realty. Said land bounded and described as follows:

On the North by lands of .....
On the East by lands of .....
On the South by lands of .....
On the West by lands of .....
and situate in .....District .....County, State of West Virginia,
and containing .....(.....) Acres,
more or less, including lands conveyed to Lessor by .....
by deed dated ..... and recorded in said County Records in Deed Book.....,
Page.....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within .....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....
.....Dollars ($.....) each three months. Said payments to begin within.....
days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or con-

Page .....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within ..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of ..... Dollars ($.....) each three months. Said payments to begin within ..... days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said Lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee agrees to bury, when requested so to do by Lessor, all pipe lines used to conduct gas off the premises, and to pay all damages to growing crops caused by operations under this lease.

Lessor shall be entitled to gas free of cost for domestic use in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatever, and in consideration therefor, Lessee is to have free of charge the waste and casing head gas from oil wells, and water from any power plant on these premises to use off the said premises for such use as Lessee may desire, and to operate and maintain pipe lines and surface rods to and from adjoining lands.

Lessee agrees to drill a well on said premises within ..... from this date or pay to Lessor ..... Dollars ($.....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any royalty or gas well. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the bank herein below named of ..... Dollar.. and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the ..... County Court Clerk's Office, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to ..... by deposit to ..... credit in The ..... Bank of ....., or by check made payable to ..... order and mailed to..... ....., at ..... P. O. ..... County, State of ....., who is hereby appointed Agent for such purpose.

.....

.....

.....

All grants, conditions, terms and limitations between the parties hereto shall extend to their heirs, executors, administrators, successors or assigns.

IN WITNESS WHEREOF, We, the parties hereto have hereunto set our hands and seals the day and year first above written.

Witness:

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

.... (Seal)

STATE OF WEST VIRGINIA,
County of ..... } TO-WIT:

I, ...

a ..... of said County of ....., do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the ..... day

of ..... A. D. 191 .., ha .. this day acknowledged the same before me in my said County.

Given under my hand this ..... day of ....., A. D. 191 ..

.....

.....

My commission expires the ..... day of ....., A. D. 191 ..

STATE OF WEST VIRGINIA,
County of ..... } TO-WIT:

I, ...

a ..... of said County of ....., do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the .....day

of ..... A. D. 191 .., ha .. this day acknowledged the same before me in my said County.

Given under my hand this ..... day of ..... 191 ..

My commission as Notary Public .....

expires ..... Notary Public.

Lease No.

OIL and G

.....

.....

Date .....

Term of Years .....

No. Acres .....

On the Waters of .....

District .....

County .....

State of .....

Received .....

at .....

Recorded .....

in .....

Record of Leases, ...

.....

Clerk's Fee, $ .....

Recorder's Fee, $ .....

1852

Lease No.....

OIL and GAS LEASE

From

.....

.....

To

.....

Date ..... 191....

Term of Years.....

No. Acres .....

On the Waters of.....

District .....

County .....

State of .....

Received .....

at ..... o'clock, ... M.

Recorded ..... 191....

in ..... County, ...

Record of Leases, Vol. ..... Page.....

.....

Recorder.

County Clerk.

Clerk's Fee, $.....

Recorder's Fee, $.....

U. L. D. No. 63-5M-1-12

THIS AGREEMENT, Made and entered into this.....day of .....
A. D. 191...., between .....
.....
.....
.....
hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a corporation, hereinafter called the Lessee;
(Incorporated)

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, does hereby grant unto the Lessee for the term of twenty years and so long thereafter as oil or gas is produced from the land leased, and royalty and rentals paid by Lessee therefor, all the oil and gas in and under the lands hereinafter described, together with the exclusive right to drill for, produce and market said oil and gas, and to possess so much of said lands as may be necessary or convenient to such operations, the right to use oil, gas and water from said lands in operations thereon and the right to remove, at any time, any and all property placed by Lessee in or upon said premises, and Lessor waives the right to claim or hold during or after the term hereof any of said property as fixtures or as a part of the realty. Said land bounded and described as follows:

On the North by lands of .....
On the East by lands of .....
On the South by lands of .....
On the West by lands of .....
and situate in ..... Precinct, District ..... County, State of.....,
and containing .....(.....) Acres,
more or less, including lands conveyed to Lessor by.....
by deed dated ....., and recorded in said County Records in Deed Book.....,
Page.....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within.....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....
.....Dollars ($.....) each three months. Said payments to begin within.....

Page.....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within.....feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....Dollars ($.....) each three months. Said payments to begin within..... days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said Lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee agrees to bury, when requested so to do by Lessor, all pipe lines used to conduct gas off the premises, and to pay all damages to growing crops caused by operations under this lease.

Lessor shall be entitled to gas free of cost for domestic use in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatever, and in consideration therefor, Lessee is to have free of charge the waste and casing head gas from oil wells, and water from any power plant on these premises to use off the said premises for such use as Lessee may desire, and to operate and maintain pipe lines and surface rods to and from adjoining lands.

Lessee agrees to drill a well on said premises within.....from this date or pay to Lessor.....Dollars ($.....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any royalty or gas well. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the bank herein below named of ..... Dollar.. and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the..... County Court Clerk's Office, ..., either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to .... by deposit to ..... credit in The ..... Bank of ....., or by check made payable to ..... order and mailed to..... ....., at .....P. O., ... County, State of ....., who is hereby appointed Agent for such purpose.

.....

.....

All grants, conditions, terms and limitations between the parties hereto shall extend to their heirs, executors, administrators, successors or assigns.

IN WITNESS WHEREOF, We, the parties hereto have hereunto set our hands and seals the day and year first above written.

Witness:

.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)
.....	..... (Seal)

Attest:

.....
Sec'y.

UNITED FUEL GAS COMPANY,
(Incorporated)

By.....
President.

STATE OF WEST VIRGINIA,
County of ..... } TO-WIT:

I, ...

a ..... of said County of ....., do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the ..... day

of .....A. D. 191.... ha.... this day acknowledged the same before me in my said County.

Given under my hand this .....day of ....., A. D. 191....

.....

.....

My commission expires the .....day of ....., A. D. 191....

STATE OF KENTUCKY,
County of ..... } SS.

I, ..., a Notary Public in and for the County and State aforesaid, certify that the foregoing instrument of writing, and bearing date the .....day of ....., 191...., was this day produced before me by..... and ....., his wife, known to me to be the parties therein named, and signing same, and by..... acknowledged before me in my said county to be their act and deed.

Given under my hand and seal of office this.....day of .....191....

My commission as Notary Public .....

expires ..... Notary Public.

Lease No. ....

OIL and G

.....

.....

UNITED F

(Inc

Date .....

Term of Years.....

No. Acres .....

On the Waters of.....

Precinct .....

District .....

County .....

State of .....

Received .....

at .....

Recorded .....

in .....

Record of Leases,

.....

Clerk's Fee,

Recorder's Fee,

1074

Lease No.....

OIL and GAS LEASE

From

.....

.....

To

UNITED FUEL GAS Co.

(Incorporated)

Date ..... 191....

Term of Years.....

No. Acres .....

On the Waters of.....

Precinct .....

District .....

County .....

State of .....

Received .....

at .....o'clock, ...M.

Recorded ..... 191....

in ..... County, ...

Record of Leases, Vol..... Page.....

.....

Recorder.

County Clerk

Clerk's Fee, $.....

Recorder's Fee, $.....

RELEASE.

UNITED FUEL GAS COMPANY, Lessee, having paid to the lessor one dollar and all amounts for delay due hereunder, and having elected to surrender the within lease and all rights thereunder, does hereby surrender and cancel the same, and hereby endorses the surrender hereon.

(Incorporated)

IN WITNESS WHEREOF, Lessee has hereunto set Lessee's hand this ..... day of .....A. D. 191....

.....

.....

.....

THIS AGREEMENT, Made and entered into this .....day of .....,

A. D. 191..... between.....

.....

.....

.....

hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a corporation, hereinafter called the Lessee;
(Incorporated)

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, does hereby grant unto the Lessee for the term of twenty years and so long thereafter as oil or gas is produced from the land leased, and royalty and rentals paid by Lessee therefor, all the oil and gas in and under the lands hereinafter described, together with the exclusive right to drill for, produce and market said oil and gas, and to possess so much of said lands as may be necessary or convenient to such operations, the right to use oil, gas and water from said lands in operations thereon and the right to remove, at any time, any and all property placed by Lessee in or upon said premises, and Lessor waives the right to claim or hold during or after the term hereof any of said property as fixtures or as a part of the realty. Said land bounded and described as follows:

On the North by lands of.....

On the East by lands of.....

On the South by lands of.....

On the West by lands of.....

and situate in .....District, ...County, State of West Virginia,

and containing ..... (.....) Acres,

more or less, including lands conveyed to Lessor by .....

by deed dated ....., and recorded in said County Records in Deed Book .....,

Page .....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within ..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....

.....Dollars ($.....) each three months. Said payments to begin within.....

days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by

also license to operate on same of pipe line a royalty of One Eighth (1/8) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of.....

.....Dollars ($.....) each three months. Said payments to begin within..... days after the completion of said well.

Said Lessee shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said Lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee agrees to bury, when requested so to do by Lessor, all pipe lines used to conduct gas off the premises, and to pay all damages to growing crops caused by operations under this lease.

Lessor shall be entitled to gas free of cost for domestic use in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatever, and in consideration therefor, Lessee is to have free of charge the waste and casing head gas from oil wells, and water from any power plant on these premises to use off the said premises for such use as Lessee may desire and to operate and maintain pipe lines and surface rods to and from adjoining lands.

This lease is not to go into effect or merge or replace a prior lease dated ..... now held on said land by said Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Lessee agrees to drill a well on said premises by .....or pay to Lessor ..... Dollars ($.....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any royalty or gas well. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the bank herein below named of .....Dollar.. and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the.....County Court Clerk's Office, West Virginia, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to..... ..... by deposit to ..... credit in The ..... Bank of ....., or by check made payable to..... order and mailed to....., at ..... P. O., ... County, State of ..... ,who is hereby appointed Agent for such purpose.

.....

All grants, conditions, terms and limitations between the parties hereto shall extend to their heirs, executors, administrators, successors or assigns.

IN WITNESS WHEREOF, We, the parties hereto have hereunto set our hands and seals the day and year first above written.

WITNESS:

.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)

ATTEST:

.....
Sec'y.

UNITED FUEL GAS COMPANY,
(Incorporated)

By .....
President.

STATE OF WEST VIRGINIA,
County of ..... } TO WIT:

I, ...

a ..... of said County of ..... do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the ..... day

of .....A. D. 191..... ha.... this day acknowledged the same before me in my said County.

Given under my hand this ..... day of ..... A. D. 191....

.....

.....

My commission expires the ..... day of ..... A. D. 19.....

STATE OF WEST VIRGINIA,
County of ..... } TO WIT:

I, ...

a .....of said County of ..... do certify that

..... and .....

his wife, whose names are signed to the within writing, bearing date the ..... day

of .....A. D. 191..... ha.... this day acknowledged the same before me in my said County.

Given under my hand this ..... day of ..... A. D. 191....

.....

.....

My commission expires the ..... day of..... A. D. 19.....

LEASE No.

OIL AND

.....

.....

UNITED F

(I

Date .....

Term of Years .....

No. Acres .....

On the Waters of .....

District .....

County .....

State of .....

Received .....

at .....

Recorded .....

in .....

Record of Leases, V. ..

.....

Clerk's Fee, $.....

Recorder's Fee, $.....

LEASE NO. .....

OIL AND GAS LEASE

FROM

.....

.....

TO

UNITED FUEL GAS CO.
(Incorporated)

Date ..... 191....

Term of Years .....

No. Acres .....

On the Waters of .....

District .....

County .....

State of .....

Received .....

at .....o'clock.....M.

Recorded ..... 191....

In ..... County.

Record of Leases, Vol. ..... Page .....

.....

Recorder.

County Clerk.

Clerk's Fee, $.....

Recorder's Fee, $.....

RELEASE.

UNITED FUEL GAS COMPANY, (Incorporated) Lessee, having paid to the lessor one dollar and all amounts for delay due hereunder, and having elected to surrender the within lease and all rights thereunder does hereby surrender and cancel the same, and hereby releases the surrender hereof.

IN WITNESS WHEREOF, Lessee has hereunto set Lessee's hand this ..... day of

A. D. 191....

.....

.....

THIS AGREEMENT, Made and entered into this ..... day of .....,

A. D. 191..., between .....

.....

.....

.....

hereinafter called the Lessor, and UNITED FUEL GAS COMPANY, a corporation, hereinafter called the Lessee;

WITNESSETH: That the Lessor, in consideration of One Dollar, the receipt of which is hereby acknowledged, and of the covenants and agreements hereinafter contained, does hereby grant unto the Lessee for the term of twenty years and so long thereafter as oil or gas is produced from the land leased, and royalty and rentals paid by Lessee therefor, all the oil and gas in and under the lands hereinafter described, together with the exclusive right to drill, for, produce and market said oil and gas, and to possess so much of said lands as may be necessary or convenient to such operations, the right to use oil, gas and water from said lands in operations thereon and the right to remove, at any time, any and all property placed by Lessee in or upon said premises, and Lessor waives the right to claim or hold during or after the term hereof any of said property as fixtures or as a part of the realty. Said land bounded and described as follows:

On the North by lands of .....

On the East by lands of .....

On the South by lands of .....

On the West by lands of .....

and situate in ..... Precinct ..... County, State of Kentucky,

and containing ..... (.....) Acres,

more or less, including lands conveyed to Lessor by .....

by deed dated ....., and recorded in said County records in Deed Book .....,

Page .....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of .....

..... Dollars ($ .....) each three months. Said payments to begin within .....

TO HAVE AND TO HOLD said premises for said purposes for and during the term aforesaid.

No well to be drilled within ..... feet of the barn or dwelling house without Lessor's consent.

The Lessee to deliver to Lessor in tanks or pipe line a royalty of One-Eighth (⅛) of all oil produced and saved from the premises, and to pay for each gas well while the gas is sold therefrom the sum of .....

..... Dollars ($ .....) each three months. Said payments to begin within .....

days after the completion of said well.

Said Lessor shall not be required in any event to increase the rate of said gas well payments or said royalty of oil by reason of any royalty or interest in said oil or gas that may have been heretofore sold, reserved, or conveyed by said Lessors, or ..... predecessors in title or otherwise. And any such outstanding royalty or interest shall be first deducted from the royalties and rentals above provided to be paid or delivered.

Lessee agrees to bury, when requested so to do by Lessor, all pipe lines used to conduct gas off the premises, and to pay all damages to growing crops caused by operations under this lease.

Lessor shall be entitled to gas free of cost for domestic use in one dwelling on said premises from any gas well thereon, so long as Lessee shall operate the same and the pressure is sufficient for such use, and shall use said gas at Lessor's own risk, with economical gas burning appliances (subject to Lessee's approval), and Lessee shall not be liable for an insufficient supply from any cause whatever, and in consideration therefor, Lessee is to have free of charge the waste and casing head gas from oil wells, and water from any power plant on these premises to use off the said premises for such use as Lessee may desire, and to operate and maintain pipe lines and surface rods to and from adjoining lands.

This lease is not to go into effect or merge or replace a prior lease dated ....., now held on said land by said Lessee, unless the term of said prior lease should expire without being extended by the production of oil or gas.

Lessee agrees to drill a well on said premises by ..... or pay to Lessor ..... Dollars ($ .....) each ..... thereafter until such well is drilled or this lease surrendered. If a well be completed before the end of the term for which payment has been made to Lessor for delay, the unearned portion of said payment shall be a credit to Lessee on any royalty or gas well. And it is agreed that, at any time, upon the tender or payment to Lessor in hand or deposit to Lessor's credit in the bank herein below named of ..... Dollar.. and all amounts for delay then due hereunder, Lessee shall have the right to surrender this lease by returning it to Lessor, with proper deed of release and surrender, or by recording said release deed and surrender in the ..... County Court Clerk's Office, Kentucky, either of which Lessor agrees to accept as and which shall be a full and legal surrender of this lease and Lessee's rights, and a cancellation of all liabilities under this lease of each and all parties hereto.

Payments of all moneys herein named or due under this lease may be made by cash or check to ..... , by deposit to ..... credit in The ..... Bank of ....., or by check made payable to ..... order and mailed to....., at ..... P. O., ... County, State of ....., who is hereby appointed Agent for such purpose.

.....

All grants, conditions, terms and limitations between the parties hereto shall extend to their heirs, executors, administrators, successors or assigns.

IN WITNESS WHEREOF, We, the parties hereto have hereunto set our hands and seals the day and year first above written.

WITNESS:

.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)
.....	..... (SEAL)

STATE OF KENTUCKY, } TO WIT:

COUNTY OF .....

I, ...

I, ..., a Notary Public, in and for the County and State aforesaid, certify that the foregoing instrument of writing from .....

to UNITED FUEL GAS COMPANY, a corporation, and bearing date the ..... day of ....., 19....., was this day produced before me in said County and State, by said Grantor... and acknowledged before me by said ..... to be ..... act and deed.

My Commission of Notary Public will expire on the ..... day of ....., 19.....

Given under my hand and seal this ..... day of ....., 19.....

.....

Notary Public in and for the County and State aforesaid.

STATE OF KENTUCKY, } TO WIT:

COUNTY OF .....

I, ..., a Notary Public, in and for the County and State aforesaid, certify that the foregoing instrument of writing from .....

to UNITED FUEL GAS COMPANY, a corporation, and bearing date the ..... day of ....., 19....., was this day produced before me in said County and State, by said Grantor... and acknowledged before me by said ..... to be ..... act and deed.

My Commission of Notary Public will expire on the ..... day of ....., 19.....

Given under my hand and seal this ..... day of ....., 19.....

.....

Notary Public in and for the County and State aforesaid.

LEASE NO.

OIL AND

.....

.....

UNITED

Date .....

Term of Years .....

No. Acres .....

On the Waters of .....

Precinct .....

County .....

State of .....

Received .....

at .....

Recorded .....

in .....

Record of Leases, ...

.....

Clerk's Fee, $...

Recorder's Fee, $...

LOVETT PRINTING

1058

Lease No. .....

OIL AND GAS LEASE

FROM

.....

.....

TO

UNITED FUEL GAS CO.

Date ..... 191....

Term of Years .....

No. Acres .....

On the Waters of .....

Precinct .....

County .....

State of .....

Received .....

at ..... o'clock, ... M.

Recorded ..... 191....

in ..... County, ...

Record of Leases, Vol....., Page.....

.....

Recorder.

County Clerk.

Clerk's Fee, $.....

Recorder's Fee, $.....

LOVETT PRINTING CO., CHARLESTON, W. VA.

RELEASE

UNITED FUEL GAS COMPANY. Having paid to the Lessor ..... dollar.. and all amounts for delay hereunder, and having elected to surrender the within lease and all rights thereunder, does hereby surrender and cancel the same, and hereby endorses the surrender hereon.

IN WITNESS WHEREOF, Lessee has hereunto set Lessee's hand this ..... day of

.....

....., A. D., 191....

.....

.....

.....

.....

[fol. 1776] JUDGE EXHIBIT No. 1

United Fuel Gas Company, Inc., and Subsidiaries and Virginian Gasoline and Oil Company

Report on Natural Gas Investment as of December 31, 1923, and Results from Operations for Year Ended that Date

[fol. 1777] Telephone Randolph 5386

Arthur Anderson & Co., Certified Public Accountants, Harris Trust Building, Chicago

Chicago, New York, Milwaukee Washington, Kansas City

December 27, 1924.

Mr. H. D. Rummel, Attorney-at-law, Charleston, West Virginia.

DEAR SIR: In accordance with instructions received from you acting pursuant to resolutions passed by the cities of Charleston and Huntington under dates of June 2, 1924 and July 8, 1924 respectively, we have made an investigation of the books and records of the United Fuel Gas Company and its subsidiaries, the Cabin Creek Gas Company and Warfield Natural Gas Company, and also those of the Virginian Gasoline and Oil Company, an affiliated company. This investigation was made for the purpose of ascertaining the original cost of the natural gas property owned by the United Fuel Gas Company and its subsidiaries as of December 31, 1923, and also for the purpose of determining the results from natural gas operations in the case of the combined companies for the year ended that date.

Original Cost of Property Devoted to Natural Gas Service

According to the records of the companies involved in this investigation, the book value of all properties owned at December 31, 1923 was $74,069,215.83. This amount is divided between the different [fol. 1778] classes of investment as follows:

Natural Gas	$59,636,100.24
Gasoline (Including Tank Cars)	1,750,302.81
Oil	12,449,910.18
Carbon Black	113,868.44
Incomplete Construction	119,034.16
Total	$74,069,215.83

The book value of the natural gas property is made up as follows:

Original Properties acquired plus Additions and Extensions stated at Cost reflected by Books	$27,511,797.04
Value Added through Appraisal of Acreage	32,124,303.20
Total Book Value Natural Gas Property	$59,636,100.24

As indicated above there was added (in 1918) to the cost of the property the sum of $32,124,303.20 for the purpose of bringing the value of the acreage or leasehold rights owned by the company to the amount found by an engineering appraisal made about that time. Since this amount clearly represents appreciation over and above the cost of such acreage or leasehold rights to the company, it must be excluded in any determination of the original cost of the physical property at present in service.

For the purposes of this report certain adjustments have been made to the original cost of the property as reflected by the books which adjustments result in a reduction of the same to the extent of $1,222,885.21 as shown below:

Original Cost per Books, as above		$27,511,797.04
Deduct:		
Unoperated Acreage Assignable to Oil Investment	$389,590.61	
Financing Improvement and Betterment	195,727.58	
Depreciation and Adjustment	756,601.18	
	$1,341,919.37	
Less Incomplete Construction	119,034.16	
		1,222,885.21
Original Cost after above Adjustments		$26,288,911.83

[fol. 1779] The cost of practically all unoperated acreage whether oil or gas, or both, is carried on the books of the United Fuel Gas Company, Inc., and its subsidiaries and is shown as natural gas investment. A considerable amount of this acreage is probable oil territory and the rights to extract such oil when found have already been assigned in a number of cases to the Virginian Gasoline and Oil Company. When the assignment of these rights was made in 1922 no part of the book cost of the acreage was transferred to the books of the Virginian Company. The result is that the natural gas investment includes the cost of whatever acreage will prove to be oil bearing in the future. Not all of the acreage owned or controlled by the company carries oil rights. On a large proportion of the total acreage the oil rights are owned by other parties such as the South Penn Oil Company, the Ohio Fuel Oil Company and others.

On December 31, 1923, the company had on its books 504,387.28 acres for which it held either directly or indirectly both the gas and oil rights. That oil rights which it did not hold directly were held by the Virginian Gasoline and Oil Company. The book cost of the acreage for which joint oil and gas rights were held was $2,597,270.75. No entirely satisfactory basis can be found for allocating this joint investment between oil and gas. In order to arrive at some reasonable basis of allocation, we studied such factors as the ratio of operated oil acreage and investment to operated gas acreage and investment; the ratio of the appraisal values of the gas and oil acreage, both operated and unoperated; and the total acreage of the company known or reasonably certain to be oil or gas territory, etc. These bases indicated that 13 to 25 per cent of acreage in which joint rights were involved should be charged to the oil department. In reports on the same property made by this firm prior to the one dated April 23, 1923, $350,000 was deducted as representing oil investment. In our report dated 23, 1923, 20 per cent or $496,094.95 was eliminated from the natural gas investment and assigned to the oil department. Our investigations indicated that 15 per cent is about the minimum amount of the joint acreage cost which can be considered as assignable to oil investment. The adjustment on this basis as already shown in the statement above is $389,590.61.

[fol. 1780] The adjustment under the caption of Financing Improvements and Betterments is for the purpose of eliminating from the property accounts the element of bond discount and expense. This discount and expense was incurred for the most part in connection with the marketing of the company's first mortgage bonds in 1916 and 1917. Items of this character are properly classified as a deferred charge. They are, in effect, interest paid in advance and as such should be amortized over the life of the securities to which they relate. Public Service Commissions generally have held that this is the proper treatment for security discount and expense items.

Prior to 1916 in cases where the company retired property or abandoned acreage it charged the book cost thereof either to operating expenses or to profit and loss. In the years 1916 and 1917 and to a minor extent in 1918 it transferred such book cost from the physical property accounts to an account called Depreciation and Adjustment. The amounts in the latter account were still retained as part of the natural gas property cost. Since this property is no longer in service its cost cannot be included in the original cost of the existing property. If a depreciation reserve had been provided in the earlier years the amounts in the Depreciation and Adjustment account would have been chargeable thereagainst. In the absence of a depreciation provision the book cost of the retired or abandoned property should have been charged to profit and loss. In any event this item is not properly included in the cost of the physical property.

In reports heretofore made we have always included Incomplete Construction as a part of the property cost. Such incomplete con-

struction is often incomplete from an accounting standpoint only. The property is sometimes actually in use and where this is not the case the investment has at any rate already been made. In the present case no interest is charged to construction so that no carrying charge is added to the direct cost.

The cost of the gas property after adjustment ($26,288,911.83) as shown above does not represent the actual cash cost of the property either to the present owners or to the present owners and their prede- [fol. 1781] cessors in interest. At the time the present company (United Fuel Gas Company, Inc., and Subsidiaries) was organized in 1909 it acquired property, represented principally by acreage, from the United Fuel Gas Company (old Company), the United States Natural Gas Company and the Hope Natural Gas Company. On the books of the United Fuel Gas Company, Inc. (the new Company) the property acquired was taken up partly on an appraisal basis and partly on the basis of the book values of one of the predecessor companies. The consideration as far as reflected by the books of the United Fuel Gas Company, Inc., is concerned, was the issuance to third parties of certain stock and debenture bonds such third parties in turn making the actual settlement in the case of the Hope Natural Gas Company and the United States Natural Gas Company acquisitions. The actual cash cost of the properties to the present owners cannot be accurately ascertained unless access can be had to the books of the companies from whom the properties were acquired. The method used by the company in finally recording such acquisitions on its books had the effect of clearing all of the unaccounted for physical property through the acreage account so that subject to the correctness of the book cost of the acreage the other physical items are recorded on the books as nearly as may be at the original cost thereof. A separate report showing the makeup of the acreage accounts is being submitted as of even date and explains in greater detail the financial transactions at the time of the organization of the present company.

Operating Results for Year 1923

The following statement shows the operating results of the gas department, per books and as adjusted by us:

Particulars	Per books	Adjustments	As adjusted
[fol. 1782] Gross Earnings	$7,730,176.40	$1,495,496.69	$9,225,673.09
Operating Expenses and Ordinary Taxes	3,422,456.68	79,006.06*	3,343,450.62
Net Earnings	$4,307,719.72	$1,574,502.75	$5,882,222.47
Add—50% of Gasoline Net Earnings		934,393.91	934,393.91
Net Earnings after Deducting for Proportion of Gasoline Net Earnings	$4,307,719.72	$2,508,896.66	$6,816,616.38
Income Tax Estimated		312,346.14	312,346.14
Net Earnings Available for Depletion, Depreciation and Return on Investment	$4,307,719.72	$2,196,550.52	$6,504,270.24

The details of the adjustments shown above are set forth in the statement which follows:

Adjustment of Gross Earnings—Increased Revenue which would accrue to company if affiliated companies paid rates comparable with those paid by West Virginia Consumers	$1,495,496.69	$1,495,496.69
Adjustment of Operating Expenses:		
Unoperated acreage rentals and expense properly chargeable to oil department	88,039.31	
Proportion of Taxes assignable to oil department	7,207.43	
	$95,246.74	

Operating Results for Year 1923—Continued

Particulars	Per books	Adjustments	As adjusted
Less Profit and Loss Items chargeable to Operations		16,240 68	
			79,006 03
Total above Adjustments			$1,574,502 75
Add 50% of Gasoline Net Earnings			934,393 91
			$2,508,896 66
Deduct Estimated Federal Income Tax Assignable to Gas Department			312,346 14
Net Adjustments, as above			$2,196,550 52

(*Red in copy.)

[fol. 1783] The contracts covering the sale of gas to the Columbia Gas and Electric Company and the Ohio Fuel Supply Company provide for an average rate per M Cubic Feet which is considerably less than that paid by the other wholesale consumers. The Columbia and Ohio Fuel Companies jointly own all of the common stock of the United Fuel Gas Company, Inc. and it is understood that the price at which gas is sold to them has been determined by considerations other than the cost or value of the gas from the standpoint of the selling company. In order that the rate in the case of these companies might be placed on the same basis as those prevailing in West Virginia cities, we determined the average revenues for such cities and deducted therefrom an allowance per M Cubic Feet to cover distribution costs. Based on the actual cost of the distribution system plus expense of operation and overhead items, the average cost per M Cubic Feet during 1923 was 3.71 cents. The Public Service Commission of West Virginia has adjusted the company's rates on a valuation base which is in excess of the cost of the property and some consideration must, therefore, be given to this fact. We have also considered the cost of reproduction less depreciation of the distribution system in this connection and it appears that a deduction of 4.5 cents from the average rate of 20.27 for West Virginia cities would represent a fair allowance for the distribution factor. This would result in the Columbia and Ohio Fuel Companies paying an average rate of 15.77 cents per M Cubic Feet instead of 7.25 cents under the existing contracts. The adjustment on this basis is set forth in the following statement:

Revenue which would have been derived in 1923 from 17,613,173 M Cubic Feet of gas sold to parent companies if rate of 15.77 cents per M Cubic Feet had applied	$2,777,597.38
Amount actually billed parent companies at average rate of 7.25 cents per M Cubic Feet	1,282,100.69
Adjustment on above basis	$1,495,496.69

As already indicated, the investment of the company in practically all joint gas and oil unoperated acreage is charged entirely to the gas department. The same principle is followed out in connection with the rentals or carrying charges on such acreage. For the pur-

[fol. 1784] poses of this report, we determined the rentals paid in 1923 on joint gas and oil acreage and assigned 15% thereof to the oil department. This is the same percentage as was used in connection with the apportionment of the book investment in the joint acreage.

The taxes on the joint acreage are also assigned to the gas department by the company. In order to adjust for this item, we apportioned to the oil department on a cost-of-property basis its proportion of the total taxes paid by the United Fuel Gas Company.

Certain profit and loss adjustments have been included by us as operating expenses because they represent delayed items which would normally flow through the operating accounts.

A deduction from operating expenses of 50% of the net earnings of the gasoline department has been made for the purposes of this report. This is in accordance with the decisions of the Public Service Commission of West Virginia and the Supreme Court of Appeals of West Virginia. The amount of the deduction has been determined as follows:

Gross Earnings—Gasoline Department		$3,013,860.53
Deduct		
Manufacturing Costs	$320,627.04	
Other Direct Expenses	415,221.87	
General Expenses	70,637.42	
Ordinary Taxes	40,537.29	
		847,023.62
Net Revenue		$2,166,836.91
Less		
Depreciation on Company Basis 10%	$116,739.73	
Federal Income Taxes Estimated	181,310.36	
		298,050.09
Net Earnings		$1,868,786.82
50% of above Net Earnings		$934,393.41

The company in 1923 made a provision of $113,508.08 for that part of the income taxes which were assignable to the gas department. We have increased this provision to $312,346.14 in order to take care of the tax which would have accrued were the company to record on its books the adjustments which we have made in this report.

[fol. 1785] Distribution of Investment and Net Earnings to Various Divisions

In a statement appended hereto, there is shown the distribution of the investment, gross earnings, operating expenses and net earnings to the various divisions of the company's business. For the purposes of this statement there is included in addition to the cost of the physical property of $26,288,911.83 as already arrived at, an allowance of $890,000 for Working Capital, and $3,000,000 for Going Concern Value. The provisions for Working Capital and Going Concern Value are the estimates for these items made by Mr. Wm. J. Hagenah of Hagenah & Erickson, Chicago, Illinois. The principal conclusions to be reached from the statement referred to are set forth in summary form below:

UNITED FUEL GA

STATEMENT SHOWING THE DISTRIBUTION OF THE

AND THE RATIO OF THE SAME TO THE INV

AND EXPENSES D

Particulars	Basis of Apportionment	C
INVESTMENT:		
Production Property Cost	Sales	
Transmission Property Cost	System Demand Mileage	
Distribution Property Cost	Direct	
General Property Cost	Overhead on Property	
Total Cost of Physical Property		
Working Capital	Overhead on Expenses	
Going Concern Value	Overhead on Property	
Total Investment in Natural Gas Service		
GROSS EARNINGS:		
Revenue from Sale of Gas	Direct	
Miscellaneous Operating and Non-Operating Revenues	Overhead on Revenues	
Total Gross Earnings		
OPERATING EXPENSES AND ORDINARY TAXES:		
Gas Purchased	Sales	
Production	Sales	
Transmission	System Demand Mileage	
Distribution	Direct	
Commercial	Direct	
General and Inter-departmental	Overhead on Expenses	
Total items above		
Taxes	Property	
Profit and Loss Adjustments	Overhead on Expenses	
Total Operating Expenses and Ordinary Taxes		
80% of Gasoline Net Revenues	Sales	
Net Operating Expenses after deducting for proportion of Gasoline Net Earnings		
Gross Income		
INCOME TAXES ESTIMATED	Taxable Income	
Net Earnings available for Depletion, Depreciation and Return		
PER CENT OF INVESTMENT IN NATURAL GAS SERVICE		

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

THE DISTRIBUTION OF THE NET EARNINGS AVAILABLE FOR DEPLETION, DEPRECIATION AND RETURN

ON OR THE SAME TO THE INVESTMENT IN NATURAL GAS SERVICE, TRANSMISSION INVESTMENT

AND EXPENSES DISTRIBUTED ON DEMAND MILEAGE BASIS

Basis of Apportionment	City of Charleston	City of Huntington	City of Williamson	Other West Virginia Districts	Total West Virginia	Kentucky and Ohio Districts	Wholesale Service	Total for Natural Gas Service
Sales	$1,834,310	$ 829,440	$109,215	$ 932,751	$3,705,916	$1,508,341	$ 9,544,467	$14,758,724
System Demand Mileage	638,510	741,045	102,534	449,288	1,931,377	1,496,072	5,893,871	9,321,320
Direct	665,523	539,081	58,060	243,602	1,506,236	581,048	-	2,087,284
Overhead on Property	14,590	9,800	1,252	7,550	33,192	46,857	71,735	121,584
	$3,153,133	$2,119,336	$271,061	$1,633,191	$7,176,721	$3,632,318	$15,510,073	$26,288,912
Overhead on Expenses	126,918	73,260	10,098	72,270	282,546	138,699	566,755	990,000
Overhead on Property	360,000	241,800	30,900	186,300	819,000	411,000	1,770,000	3,000,000
	$3,640,051	$2,434,396	$312,059	$1,891,761	$8,278,267	$4,181,817	$17,848,828	$30,278,912
Direct	$1,110,919	$ 548,948	$ 61,078	$ 671,406	$2,310,951	$1,524,867	$ 5,358,500	$ 9,194,318
Overhead on Revenues	3,788	1,866	279	1,947	7,880	5,202	18,273	31,355
	$1,114,707	$ 548,814	$ 61,357	$ 673,353	$2,318,831	$1,530,069	$ 5,376,773	$ 9,225,673
Sales	$ 76,974	$ 34,803	$ 4,583	$ 39,137	$ 155,497	$ 63,289	$ 400,478	$ 619,264
Sales	141,697	64,047	8,433	72,025	286,162	126,471	737,001	1,139,634
System Demand Mileage	81,106	47,707	6,601	28,924	164,338	96,313	379,433	600,084
Direct	48,452	24,201	4,837	25,688	101,228	57,966	-	159,194
Direct	30,606	24,637	4,325	26,947	86,519	35,925	-	122,240
Overhead on Expenses	26,652	15,384	2,121	15,177	59,334	29,126	119,436	207,896
	$ 365,247	$ 210,829	$ 30,900	$ 207,898	$ 813,074	$ 399,090	$ 1,636,348	$ 2,848,312
Property	57,468	38,199	4,932	29,740	130,739	65,609	282,550	478,898
Overhead on Expenses	4,082	1,202	166	1,185	4,635	2,275	9,331	16,241
	$ 424,797	$ 250,230	$ 35,998	$ 238,823	$ 948,248	$ 466,974	$ 1,928,229	$ 3,343,451
Sales	116,145 X	58,813 X	6,914 X	59,054 X	234,646 X	99,495 X	604,473 X	934,394 X
	$ 308,652	$ 191,417	$ 27,084	$ 179,769	$ 713,622	$ 371,479	$ 1,323,956	$ 2,409,057
	$ 806,055	$ 390,697	$ 54,873	$ 393,584	$1,605,309	$1,158,390	$ 4,059,817	$ 6,816,616
Taxable Income	19,000	8,264	1,292	9,280	37,836	27,302	247,208	312,346
	$ 787,055	$ 382,433	$ 53,581	$ 384,304	$1,567,373	$1,131,088	$ 3,812,609	$ 6,504,270
	21.62	14.87	17.17	20.31	18.93	27.15	21.32	21.48

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Divisions	Distribution of investment	Net earnings available for depletion, depreciation, and return on investment	Per cent of net earnings to investment
City of Charleston	$3,640,051	$787,055	21.62
City of Huntington	2,434,396	342,433	14.07
City of Williamson	312,059	53,581	17.17
Other West Virginia Districts	1,891,761	384,304	20.31
Total West Virginia	$8,278,267	$1,567,373	18.93
Ohio and Kentucky Districts	4,151,817	1,131,288	27.25
Wholesale Service	17,848,828	3,805,609	21.32*
Total	$30,278,912	$6,504,270	21.48

The bases of apportionment used in arriving at the results above are approved by the Public Service Commission of West Virginia in its opinions covering the rates of the United Fuel Gas Company with the exception that in the case of transmission investment and expenses, the demand mileage instead of the sales mileage basis is used. [fol. 1786] At the time the Commission originally investigated the matter of apportionments, demand information was not available. In our opinion, the demand mileage is the more accurate basis of distribution.

It will be noted that the percentages shown above are before allowance has been made for depletion and depreciation.

Our investigation showed the books of the company to be complete and well kept, and we wish to express our appreciation of the courtesies extended our representatives by the management.

Very truly yours, Arthur Andersen & Co., Certified Public Accountants

(Here follows side folio page 1787)

*21.93 per cent on basis of price charged by company for gas used by parent companies.

[fol. 1788] United Fuel Gas Company, Inc., and Subsidiaries

Statement of Adjusted Revenues and Expenses, Gas Department, for the Year Ended December 31, 1923

Particulars	Per books	Adjustments	As adjusted
Gross Earnings			
Retail Service			
City of Charleston	$1,110,919.16	$	$1,110,919.16
City of Huntington	546,948.26		546,948.26
City of Williamson	81,677.39		81,677.39
Other West Virginia Districts	571,406.07		571,406.07
Total West Virginia	$2,310,950.88	$	$2,310,950.88
Kentucky and Ohio Districts	1,524,867.13		1,524,867.13
Total Retail Sales	$3,835,818.01	$	$3,835,818.01
Wholesale Service	3,863,003.55	$1,495,496.69	5,358,500.24
Total Gas Sales	$7,698,821.56	$1,495,496.69	$9,194,318.25
Miscellaneous Operating and Non-Operating Revenues	31,354.84		31,354.84
Total Gross Earnings	$7,730,176.40	$1,495,496.69	$9,225,673.09
Operating Expenses and Ordinary Taxes			
Gas Purchased	$619,263.69	$	$619,263.69
Production	1,227,672.67	$88,039.314	1,139,633.36

Transmission	600,084.20		600,084.20
Distribution	159,194.11		159,194.11
Commercial	122,240.19		122,240.19
General and Inter-departmental	207,896.12		207,896.12
Total Items Above	$2,936,350.98	$88,039.31†	$2,848,311.67
Taxes (Other than Federal Income Taxes)	486,105.70	7,207.43†	478,898.27
Profit and Loss Adjustments		16,240.68	16,240.68*
Total Operating Expenses and Ordinary Taxes	$3,422,456.68	$79,006.06†	$3,343,450.62
Deduct 50% of Gasoline Net Earnings		934,393.91	934,393.91
Net Operating Expenses after deducting for proportion of Gasoline Net Earnings	$3,422,456.68	$1,013,399.97†	$2,409,056.71
Gross Income	$4,307,719.72	$2,508,896.66	$6,816,616.38
Income Taxes Estimated		312,346.14	312,346.14
Net Earnings available for Depletion, Depreciation and Return on Investment	$4,307,719.72	$2,196,550.52	$6,504,270.24

*Does not include $108,527.87 revenues applying to prior periods in case of the Ironton, Ohio, rate litigation settlement.
[1Red in copy.]

Adjusted Cost of Property and Plant, Gas Department as of December 31, 1923

Particulars	Cost of property and plant per books	Adjustments	Cost of property and plant as adjusted
Line Pipe	$5,884,992.38	.....	$5,884,992.38
Well Pipe	1,361,921.56	.....	1,361,921.56
Well Equipment	3,788,008.01	.....	3,788,008.01
Operated Acreage	2,009,395.14	.....	2,009,395.14
Unoperated Acreage	4,723,525.14	$389,590.61*	4,333,934.53
Right of Way	119,818.51	.....	119,818.51
Right of Way Expense	121,220.49	.....	121,220.49
Buildings	328,684.22	.....	328,684.22
Fittings	200,004.65	.....	200,004.65
Other Line Equipment	116,638.73	.....	116,638.73
Labor, Teaming and Freight	3,705,451.43	.....	3,705,451.43
Regulators	30,222.51	.....	30,222.51
Telephone and Telegraph Lines	111,924.76	.....	111,924.76
Office Furniture	42,656.92	.....	42,656.92
Tools over $25.00	17,219.37	.....	17,219.37
Meters	499,829.96	.....	499,829.96
Compressor Stations	2,888,441.59	.....	2,888,441.59
Measuring Stations	118,413.38	.....	118,413.38
Service Lines	330,563.74	.....	330,563.74
Autos, Horses and Wagons	38,518.52	.....	38,518.52
Drilling Tools	71,625.45	.....	71,625.45

Cleaning Out Tools	50,391.82		50,391.82
Cost of Financing	195,727.58	195,727.58*	
Depreciation and Adjustment	756,601.18	756,601.18*	
Total Cost of Property and Plant	$27,511,797.04	$1,341,919.37*	26,169,877.67
Incomplete Construction	119,034.16		119,034.16
Total Cost of Property and Plant including Incomplete Construction	$27,630,831.20	$1,341,919.37*	$26,288,911.83
Distribution of Total, as Above			
Production	$15,784,695.17	$1,025,971.53*	$14,758,723.64
Transmission	9,321,120.34	200.03	9,321,320.37
Distribution	2,209,888.15	122,604.04*	2,087,284.11
General	196,093.38	74,509.67*	121,583.71
Total Cost of Property and Plant	$27,511,797.04	$1,222,885.21*	$26,288,911.83
Incomplete Construction	119,034.16	119,034.16*	
Total as above	$27,630,831.20	$1,341,919.37*	$26,288,911.83

[*Red in copy.]

Statement of Provision for Depreciation and Depletion Arrived at by Applying Annual Rate Used by Company to Adjusted Original Cost of Property as of December 31, 1923

Particulars

Gas Department

Depreciation Gas Wells	Original cost of property and plant at Dec. 31, 1923, as adjusted	Annual depreciation rate used by company	Amount
Tubing and Casing	$1,381,443.98	8	$110,515.52
Other Equipment	1,362,997.51	8	109,032.60
Well Connecting Lines	677,767.18	8	54,221.37
Field Gathering Lines	2,109,177.17	5	105,458.86
Transmission Lines	6,167,380.13	5	308,369.01
Street Mains	1,174,279.29	5	58,713.96
Regulators	30,222.51	5	1,511.13
Meters	499,829.96	5	24,991.50
Measuring Stations	118,413.38	5	5,920.67
Service Lines	330,563.74	5	16,528.19
Large Tools	17,219.37	5	860.97
Drilling Tools	71,625.45		
Cleaning Out Tools	50,391.82	5	2,519.59
Telephone and Telegraph Lines	111,924.76	5	5,596.24
Buildings	328,684.22	4	13,147.37
Furniture and Fixtures	42,656.92	6⅔	2,843.79

Horses, Wagons and Automobiles	38,518.52	10	3,851.85
Compressor Stations	2,888,441.59	5	144,422.08
Incomplete Construction	119,034.16	5	5,951.71
	$17,520,481.66	5.5	$974,456.41
Depletion	8,768,430.17	3.16	277,082.39
Total Gas Department	$26,288,911.83	4.8	$1,251,538.80
Gasoline Department	$1,167,387.25	10	$116,738.72
Oil Department			
Depreciation	$1,854,528.82	10.3	$191,327.29
Depletion	1,585,048.70	5.37	85,115.05
Total Oil Department	$3,439,577.52	8	$276,442.34
Carbon Black Department	$113,868.44	10	$11,386.84
Tank Car Department	$582,915.56	5	$29,145.78
Total Depreciation	$21,239,181.73	6.2	$1,323,055.04
Total Depletion	10,353,478.87	3.5	362,197.44
Grand Total	$31,592,660.60	5.3	$1,685,252.48

United Fuel Gas Company, Inc., and Subsidiaries Kentucky and Ohio Districts

Statement Showing the Distribution of the Net Earnings Available for Depreciation, Depletion, and Return and the Ratio of the Same to the Investment in Natural Gas Service, Transmission, Investment, and Expenses Distributed on Demand Mileage Basis

Particulars Investment	Basis of apportionment	Ashland and Catlettsburg, Kentucky district	Ohio districts	Total Kentucky and Ohio districts
Production Property Cost	Sales	$1,029,292	$479,049	$1,508,341
Transmission Property Cost	System Demand Mileage	958,085	537,987	1,496,072
Distribution Property Cost	Direct	307,697	273,441	581,048
General Property Cost	Overhead on Property	10,662	5,995	16,657
Total Cost of Physical Property		$2,305,646	$1,296,472	$3,602,118
Working Capital	Overhead on Expenses	87,367	51,332	138,699
Going Concern Value	Overhead on Property	263,081	147,919	411,000
Total Investment In Natural Gas Service		$2,656,094	$1,495,723	$4,151,817
Gross Earnings				
Revenue from Sale of Gas	Direct	$994,197	$530,670	$1,524,867
Miscellaneous Operating and Non-Operating Revenues	Overhead on Revenues	3,392	1,810	5,202
Total Gross Earnings		$997,589	$532,480	$1,530,069

Operating Expenses and Ordinary Taxes

Gas Purchased	Sales	$43,188	$20,101	$63,289
Production	Sales	79,480	36,991	116,471
Transmission	System Demand Mileage	61,679	34,634	96,313
Distribution	Direct	30,190	27,776	57,966
Commercial	Direct	18,508	17,417	35,925
General and Inter-departmental	Overhead on Expenses	18,346	10,780	29,126
Total items above		$251,391	$147,699	$399,090
Taxes	Property	41,996	23,613	65,609
Profit and Loss Adjustments	Overhead on Expenses	1,433	842	2,275
Total Operating Expenses and Ordinary Taxes	Sales	$294,820	$172,154	$466,974
50% of Gasoline Net Revenues		*65,166	*30,329	*95,495
Net Operating Expenses after deducting for proportion of Gasoline Net Earnings		$229,654	$141,825	$371,479
Gross Income		$767,935	$390,655	$1,158,590
Income Taxes, estimated	Taxable Income	18,096	9,206	27,302
Net Earnings available for Depletion, Depreciation and Return		$749,839	$381,449	$1,131,288
Per Cent of Investment in Natural Gas Service		28.23	25.50	27.25

[*Red in copy.]

United Fuel Gas Company, Inc., and Subsidiaries

Return on Investment After Deducting Depletion and Depreciation for the Year Ended December 31, 1923

Particulars	Investment	Net earnings available for depreciation, depletion, and return	Depreciation and depletion	Net earnings available for return	Per cent on investment
Depreciation and Depletion Computed on Company's Cost Basis	(1)	(2)	(3)	(4)	(5)
City of Charleston	$3,640,051	$787,055	$150,185*	$636,870	17.49
City of Huntington	2,434,396	342,433	100,874*	241,559	9.92
City of Williamson	312,059	53,581	12,891*	40,690	13.04
Other West Virginia	1,891,761	384,304	77,720*	306,584	16.20
Total West Virginia	$8,278,267	$1,567,373	$341,670*	$1,225,703	14.81
Kentucky and Ohio	4,151,817	1,131,288	171,461*	959,827	23.11
Wholesale Service	17,848,828	3,805,000	738,408*	3,067,201	17.18
Total Natural Gas Service	$30,278,912	$6,504,270	$1,251,539*	$5,252,731	17.34
Depletion and Depreciation Computed on Basis of Exhibits Filed Herewith					
City of Charleston	$3,640,051	787,055	$167,907*	$619,148	16.94
City of Huntington	2,434,396	342,433	112,778*	229,655	9.43

City of Williamson	312,059	53,581	14,412*	39,169	12.55
Other West Virginia	1,891,761	384,304	86,892*	297,412	15.72
Total West Virginia	$8,278,267	$1,567,373	$381,989*	$1,185,384	14.32
Kentucky and Ohio	4,151,817	1,131,288	191,694*	939,594	22.63
Wholesale Service	17,848,828	3,805,999	825,544*	2,980,065	16.69
Total Natural Gas Service	$30,278,912	$6,504,270	$1,399,227*	$5,105,043	16.86

[*Red in copy.]

[fol. 1793]

JUDICIAL EXHIBIT NO. 2-A

United Fuel Gas Company, Inc., and Subsidiaries

Return on Investment After Deducting Depletion and Depreciation for the Year Ended December 31, 1923

Particulars	Investment	Net earnings available for depletion, depreciation, and return	Depletion and depreciation	Net earnings available for return	Per cent of investment
Depletion and Depreciation Computed on Company's Cost Basis					
City of Charleston	$3,640,051	$787,055	$150,185*	$636,870	17.49
City of Huntington	2,434,396	342,433	100,874*	241,559	9.92
City of Williamson	312,059	53,581	12,891*	40,690	13.04
Other West Virginia	1,891,761	384,304	77,720*	306,584	16.20
Total West Virginia	$8,278,267	$1,567,373	$341,670*	$1,225,703	14.81
Ashland and Catlettsburg, Kentucky District	2,656,094	749,839	109,752*	640,087	24.10
Ohio Districts	1,495,723	381,449	61,709*	319,740	21.38
Wholesale Service	17,848,828	3,805,609	738,408*	3,067,201	17.18
Total Natural Gas Service	$30,278,912	$6,504,270	$1,251,539*	$5,252,731	17.34
Depletion and Depreciation Computed on Basis of Exhibits Filed Herewith					
City of Charleston	$3,640,051	$787,055	$167,907*	$619,148	16.94
City of Huntington	2,434,396	342,433	112,778*	229,655	9.43

City of Williamson	312,059	53,581	14,412*	39,169	12.55
Other West Virginia	1,891,761	384,304	86,892*	297,412	15.72
Total West Virginia	$8,278,267	$1,567,373	$381,989*	$1,185,384	14.32
Ashland and Catlettsburg, Kentucky District	2,656,094	749,839	122,703*	627,136	23.61
Ohio Districts	1,495,723	381,449	68,991*	312,458	20.89
Wholesale Service	17,848,828	3,805,609	825,544*	2,980,065	16.69
Total Natural Gas Service	$30,278,912	$6,504,270	$1,399,227*	$5,105,043	16.86

(*Red in copy.)

[fol. 1794] JIRGAL EXHIBIT No. 3

United Fuel Gas Company, Inc., and Subsidiaries

Report on Book Value of Acreage as of December 31, 1923

[fol. 1795] Telephone Randolph 5386

Arthur Anderson & Co., Certified Public Accountants, Harris Trust Building, Chicago

Chicago, New York, Milwaukee, Washington, Kansas City

December 27, 1924.

Mr. H. D. Rummel, Attorney-at-law, Charleston, West Virginia.

DEAR SIR: In a report submitted to you under date of December 27, reference is made to a separate report on the acreage investment as reflected by the books of the United Fuel Gas Company, Inc. and its subsidiaries. In order that you may understand more clearly the make-up of the original and present book value of the acreage, it is necessary to give some details of the history of the company.

History and Organization

The original United Fuel Gas Company was organized on March 2, 1903, and up to the year 1909 had issued only $250,000.00 of capital stock. In the latter year it was reorganized by the formation of the United Fuel Gas Company, Inc., the present company, and the authorized capital stock was increased from $250,000.00 to $10,000,000.00. At the time of reorganization, the present company apparently took over the book assets of the old company and assumed its liabilities. The opening entries placed on the books of the new company as of July 1, 1909 were as follows:

Assets

United Fuel Gas Company—Investment Suspense Account	$990,694.91
Gas Lines	22,188.18
Cash	32,304.92
Receivables from Agents	28,825.24
Ohio Fuel Supply Company	40,000.00
Total	$1,114,013.25

Liabilities

Capital Stock	$250,000.00
Due Ohio Fuel Supply Company	778,121.23
Payroll and Vouchers Payable	85,892.02
Total	$1,114,013.25

[fol. 1796] No investigation has been made of the books of the predecessor company to determine the source of the book value of $990,694.91, but the records of the new company state that 277,-997.69 acres of leasehold rights and a few wells were acquired from the old company. The account with the Ohio Fuel Supply Company was liquidated by the issuance of $750,000.00 in capital stock, thus bringing the issued stock to $1,000,000.00.

The new company, shortly after its organization, acquired the property of the United States Natural Gas Company and certain of its subsidiaries and considerable acreage from the Hope Natural Gas Company. These acquisitions together with the property owned by the prior company form the nucleus of the present system.

The property of the United States Natural Gas Company and certain of its subsidiaries was acquired on September 3, 1909, but the accounting under the purchase contract was made as of May 31, 1909. The contract of purchase was originally made on July 15, 1909 by M. C. Treat and George W. Crawford, who later assigned their rights to the Ohio Fuel Supply Company, which company in turn directed that conveyance be made to the United Fuel Gas Company. The original contract with Messrs. Treat and Crawford provided for a cash consideration of $2,081,250.00 and the assumption by the purchasers of all of the liabilities of the United States Natural Gas Company and those of the subsidiaries covered by the purchase. The company received for the above consideration all of the physical property and rights of the United States Natural Gas Company and those particular subsidiaries together with the other assets in the form of receivables, materials, etc., owned by them.

The purchase was recorded on the books of the United Fuel Gas Company as follows:

Suspense Purchase Account		$6,849,297.10
Sundry Asset Accounts		266,822.60
		$7,116,119.70
Deduct Liabilities Assumed:		
Mortgage Bonds	$2,904,500.00	
Real Estate Mortgage	5,000.00	
Bills Payable	61,000.00	
Sundry Liabilities	71,720.95	
		3,042,220.95
Difference—Shown as Property Purchase Account		$4,073,898.75

[fol. 1797] It is our understanding that the amounts shown above for the various assets conveyed and the liabilities assumed were taken from the books of the United States Natural Gas Company and those of the subsidiaries covered by the agreement. It will be noted that the net amount shown in the property purchase account was $4,073,-898.75 as compared with the actual cash consideration of $2,081,-250.00 paid by Treat and Crawford. The difference between the

amount taken up on the books and the cash consideration was accordingly $1,992,648.75 arrived at as follows:

Amount taken up on books	$4,073,898.75
Cash Consideration	2,081,250.00
Difference	$1,992,648.75

The United States Natural Gas Company's property consisted of 143,742.48 acres of leasehold and fee rights and also a natural gas transmission and distribution system.

On June 30, 1910, the Hope Natural Gas Company deeded to the United Fuel Gas Company, its rights in 614,200.71 acres of gas and oil land and some minor property. The accounting in connection with the property was, as in the case of the United States Natural Gas Company, for some time prior to the actual date of the deeds. This acquisition was taken up on the books of the United Fuel Gas Company at $3,200,741.86. The actual cash consideration, if any, is not shown by the records.

Both the Hope Natural Gas Company and the Ohio Fuel Supply Company advanced considerable sums to the United Fuel Gas Company for development and other purposes, and in July, 1910, all of these advances and also the property purchase accounts were settled by the issuance directly or to third parties of $5,000,000.00 in Capital Stock and $3,392,072.90 in debenture bonds. The transaction was recorded on the books of the company as follows:

[fol. 1798] Accounts Settled

United States Natural Gas Company Acquisition	$4,073,898.75
Hope Natural Gas Company Acquisition	3,200,741.86
Bills Payable	200,000.00
Amount due Hope Natural Gas Company	368,984.17
Amount due Ohio Fuel Supply Company	438,653.18
Profit and Loss Suspense	41,577.98
Interest and Exchange	68,216.96
Total	$8,392,072.90

Securities Issued

Capital Stock	$5,000,000.00
6% Debenture Bonds	3,392,072.90
Total	$8,392,072.90

It will be noted that the United States Natural Gas Company and Hope Natural Gas Company purchases were included in this settlement at the amounts already referred to in the preceding pages of this report.

The distribution of the securities listed above was made as follows:

Particulars	Debentures	Stock
The Ohio Fuel Supply Company	$1,587,854.83	$1,000,000
The Hope Natural Gas Company	569,726.03	.....
Alfred C. Bedford or to whom he may direct	1,028,392.04	4,000,000
Standard Oil Company of New York	206,100.00	.....
Total	$3,392,072.90	$5,000,000

As already noted in the preceding paragraphs, the United States Natural Gas Company and Hope Natural Gas Company acquisitions were recorded on the books at values which apparently had no reference to any cash consideration involved. Later on the book value of the acreage taken over from the old United Fuel Gas Company was also placed in the same account with these acquisitions. An appraisal was apparently made of the physical property (transmission and distribution lines, wells, etc) acquired aside from the acreage, and the balance of the book value placed on the total property was considered as applying to such acreage. This acreage was first given a value of $5.00 per acre at about the time of acquisition, but this left approximately $2,000,000.00 in the property account as unassignable (fol. 17799) to any tangible property. In 1911 the officers of the company placed a value on each leasehold or other property rights ranging from $1.00 to $50.00 per acre, the aggregate of which values exactly absorbed the valuations placed upon the properties acquired. The valuation per acre for the more important districts is shown on page 14.

In all, 1,056,443.58 acres were valued in this manner and the total valuation assigned was $7,233,538.96. The acreage was divided between the three companies from whom it was acquired as follows:

United Fuel Gas Company (old company)	277,997.69
United States Natural Gas Company	143,742.48
Hope Natural Gas Company	614,200.71
Miscellaneous	20,502.70
Total	1,056,443.58

For the purpose of this valuation, all of the acreage which had already been charged off to expense on account of abandonments, amounting to about 500,000 acres, was replaced on the books and charged off again at an assigned valuation of approximately $1.00 per acre.

The following statement gives a summary of the changes which have occurred in the acreage investment account from the original acquisition of the properties of the United States Natural Gas Company, the Hope Natural Gas Company and the old United Fuel Gas Company to December 31, 1923:

Particulars	Operated acreage		Unoperated acreage	
	Acreage	Amount	Acreage	Amount
Leases Acquired				
Original Purchase from United States, Hope Natural and United Fuel (old) Companies*	21,519.99	$834,148.80	1,034,923.59	$6,399,390.16
Properties Acquired Subsequent to Original Acquisitions	3,508.50	162,671.67	65,720.50	331,714.02
Miscellaneous Leasehold Acquisitions	3,525.94	67,225.77	1,028,132.15	1,031,447.25
Total	28,554.43	$1,064,046.24	2,128,776.24	$7,762,551.43
Leases Abandoned, Sold, Transferred, etc.				
Leases Abandoned	6,092.69†	$51,575.66†	1,299,556.77†	$1,591,583.41†
Oil Rights Sold	199.00†	534.70†	1,548.83†	79,658.40†
Transfers to or from Unoperated Acreage	55,674.26	1,389,888.95	55,674.26†	1,389,888.95†
Sale of Properties, Inventory Adjustment, Etc.	9,135.28†	154,321.77†	25,986.42†	22,586.14
Total	40,346.29	$1,183,456.82	1,382,766.28†	$3,038,544.62†
Book value at December 31, 1923	68,900.72	$2,247,503.06	746,009.96	$4,724,006.81
Add Operated Acreage			68,900.72	2,247,503.06
Total Acreage Value per Books			814,910.68	$6,971,509.87

*Summarized as follows:

	Acreage	Amount
Operated Acreage	21,519.99	$834,148.80
Unoperated Acreage	1,034,923.59	6,399,390.16
Total	1,056,443.58	$7,233,538.96

(Filed in copy.)

Although it appears from this statement that approximately 1,000,000 acres have been acquired at a cost of about $1.00 per acre, since the original acquisition of the properties, it will be shown later in this report that the amount included in the investment account is in excess of the actual cost of such acreage.

[fol. 1891] The leases abandoned since July 1, 1909 amounted to about 1,300,000 acres at a book cost that is slightly in excess of $1.00 per acre. The abandonments of operated territory are almost negligible.

During this period 55,674.26 acres having a book value of $1,389,888.95 have been transferred from unoperated to the operated acreage account.

The following statement shows an analysis of the items included in the table above under the caption of Miscellaneous Leasehold Acquisitions:

Particulars	Operated acreage		Unoperated acreage	
	Acres	Amount	Acres	Amount
New Leases	3,517.48	$56,019.25	932,662.14	$318,242.62
Renewal Payments	.....	.....	.....	340,543.41
Fee Property	8.46	11,206.52	2,076.70	231,089.30
Unaccounted For	.....	.....	93,393.31	141,571.92
Total	3,525.94	$67,225.77	1,028,132.15	$1,031,447.25
Add Operated Acreage	.....	.....	3,525.94	67,225.77
Total Acreage Acquired	.....	.....	1,031,658.09	$1,098,673.02

It is the practice of the company to add the cost of renewing leases to the existing book value of each lease. Inasmuch as the majority of leases are written for a ten year period, it appears that all of the original leases have been renewed at least once and our analysis shows that many have been renewed twice. If the company had retired the book value of the leases at the date of their first expiration, the entire original valuation of the unoperated acreage amounting to $6,399,390.16, less any acreage which became operated territory before the expiration of the lease, would have been removed from the investment account.

It will be noted from the table above that 932,662.14 acres were acquired at a cost of $318,242.62 or an average of 34 cents per acre. We have made a complete analysis of these acquisitions by years and by districts from 1910 to 1923, and have abstracted the following summary from our detailed sheets on pages 21 to 27, inclusive:

[Ed. 1862] Particulars	New leases acquired		Average cost per acre
	Acres	Amount	
West Virginia:			
1910 to 1914	307,012.63	$84,235.84	$0.27
1915 to 1920	320,454.09	161,435.83	0.50
1921 to 1923	62,032.24	51,773.56	0.83
Total West Virginia	689,498.96	$297,445.23	$0.43
Kentucky:			
1910 to 1914	107,092.58	$10,783.86	$0.10
1915 to 1920	91,937.10	5,339.92	0.06
1921 to 1923	32,493.00	2,858.87	0.09
Total Kentucky	231,522.68	$18,982.65	$0.08
Ohio:			
1910 to 1914	11,640.50	$1,814.74	$0.16
Total all States:			
1910 to 1914	425,745.71	$96,834.44	$0.23
1915 to 1920	412,391.19	166,775.75	0.40
1921 to 1923	94,525.24	54,632.43	0.58
Total	932,662.14	$318,242.62	$0.34

The highest average cost per acre in this table is 83 cents in West Virginia in the period from 1921 to 1923. This period includes an extraordinary payment of $25,000.00 for 70 acres in Big Sandy district without which the average price for West Virginia during this period would be 43 cents per acre.

In our analysis of the leasehold account, which covered 90% of the acreage acquired from July 1, 1909 to December 31, 1923, it was

observed that the bonus payments bear a definite relationship to the delayed rental payment. In unproven territory where the annual rental charges are $1.00 per acre, the bonus payment amounts to one quarterly rental or 25 cents per acre. In proven territory the annual rental charges range from $150 to $500 per well site, and one annual rental is paid as a bonus. It is the practice of the company to allot 100 acres to a well site, although this basis varies considerably with the number of acres in the lease.

The prices in the table above are low because very little new territory has been acquired in the producing districts since the original acquisitions. The prices paid for territory in Kentucky average about 50 cents per year per acre in rentals with a bonus of 10 cents per acre.

[fol. 1803] It was also observed that a large number of leases in unproven territory are renewed for the nominal sum of $1.00 as a bonus, which accounts for the fact that the renewals payments charged to the investment account during the entire period have amounted to less than $50,000.00 as shown in the table on page 7.

The following statement has been compiled from a study of specific leases in several of the more important districts which are shown in detail on pages — to —:

Particulars

Big Sandy District	Acres	Amount	per acre
Original Valuation	5,400.67	$161,937.08	$29.67
Renewals 1910-1921, Inclusive	5,417.67	5,335.79	.98
Renewals 1922-1924, Inclusive	5,400.67	24,591.41	4.50
Curtis District:			
Original Valuation	1,008.00	34,706.00	31.54
Renewals 1910-1921, Inclusive	438.50	567.00	1.29
Renewals 1922-1924, Inclusive	1,008.00	1,323.75	1.31
Geary District:			
Original Valuation	3,541.75	148,170.67	41.84
Renewals 1910-1921, Inclusive	3,487.75	3,457.61	.99
Renewals 1922-1924, Inclusive	3,541.75	17,507.75	4.94
Smithfield District:			
Original Valuation	3,527.00	160,686.30	45.55
Renewals 1910-1921, Inclusive	3,361.10	2,954.41	.88
Renewals 1922-1924, Inclusive	3,527.00	10,273.03	2.91
Spencer District:			
Original Valuation	203.75	6,986.50	34.34
Renewals 1910-1921, Inclusive	191.75	178.75	.93
Renewals 1922-1924, Inclusive	203.75	205.00	1.01
Walton District:			
Original Valuation	1,221.83	63,975.00	52.36
Renewals 1910-1921, Inclusive	1,183.25	883.68	.76
Renewals 1922-1924, Inclusive	1,200.33	5,905.49	4.92
Summary:			
Original Valuation	14,903.00	573,507.55	38.37
Renewals 1910-1921, Inclusive	14,079.02	13,387.24	.95
Renewals 1922-1924, Inclusive	14,941.10	59,807.03	4.00

The summary of this statement shows that the original valuation placed upon the acreage in these districts was 40 times in excess of the renewal cost of the same acreage in the period from 1910 to 1921, and almost 10 times the renewal cost of the same acreage in the period from 1922 to 1924.

[fol. 1804] It will also be noted that 14,079.02 acres out of 14,963.60 acres considered in this analysis have been renewed twice.

The following table is presented to show that the greater portion of the original valuation given to the unoperated acreage is located in the districts which are analyzed above:

Particulars	Acres	Amount	Book value per acre
Big Sandy District	43,020.90	$966,969.55	$22.82
Curtis District	18,398.50	363,246.00	19.74
Geary District	55,904.33	1,644,508.05	29.37
Smithfield District	40,475.20	1,052,748.58	26.00
Spencer District	36,551.22	428,472.80	11.72
Walton District	25,545.59	824,870.50	32.29
Total Districts Above	220,055.74	$5,310,936.08	$24.07
All Other Districts	814,267.85	1,088,454.08	1.34
Total Unoperated Acreage	1,034,323.59	$6,399,390.16	$6.18

It is apparent from this statement that $5,310,936.08 or 83% of the total valuation of $6,399,390.16 assigned to the unoperated acreage is located in the six districts which we have analyzed in detail.

Conclusions on Book Value of Acreage

From the analysis of the acreage accounts presented in the foregoing paragraphs, it would appear:

(1) That the original book valuation assigned to the acreage did not represent the original cash cost to the present company or in all probability to the predecessor companies from which such acreage was acquired.

(2) That both the original value and the book value at present are probably considerably in excess of what would be found as the original cost were the records available.

In support of the conclusion reached above, the following facts are summarized from the preceding discussion:

(a) The original book valuation of the property acquired from the United States Natural Gas Company was approximately $2,000,000 in excess of the cash consideration paid and the liabilities assumed by Messrs. Treat and Crawford through whom the properties were acquired.

(b) The bonus or leasehold payments on acreage renewed shortly after the original purchase were considerably less than the original valuation assigned.

[fol. 1805] (c) The company has included in its property account, both the original value placed upon the acreage and the bonus paid upon any renewals to date. Practically all of the acreage has been renewed at least once and in numerous instances twice since the original purchase.

(d) The cost of reproducing the acreage today on a bonus payment basis is evidently less than the book value.

Rentals and Leasehold Expense

In Connection With Unoperated Acreage

It should be pointed out that the acreage investment accounts are designed to reflect the bonus or first payment on a leasehold right. If a well is not drilled on the lease at once as is usually the case, a delayed rental is paid by the company to the lessor. If a well is drilled and gas is found, the company pays a royalty to the lessor. Both the rental on unoperated acreage and the royalties are included in the operating expenses of the company. There is also included whatever expense is attendant to securing the lease. The carrying charges in the form of rentals on the unoperated acreage being included in the operating expenses are a part of the cost on which the present rates of the company have been determined. In order that the importance of the items of leasehold expense and unoperated acreage rentals may be noted, there is presented below a statement showing that part of these items which is assignable to the gas department after a part of the total has been allocated to the oil department:

Period	Leasehold expense	Rentals on unoperated acreage	Total
Six Months ended December 31, 1909	$10,806.53	$69,864.14	$80,670.67
Year ended December 31—			
1910	49,437.20	344,766.60	394,203.80
1911	50,617.37	345,119.24	395,736.61
1912	63,759.97	334,729.75	398,489.72
1913	63,821.19	383,015.36	446,836.55
1914	51,734.90	411,551.36	463,286.26
1915	41,411.05	448,851.22	490,262.27
1916	45,209.25	448,020.08	493,229.33
1917	32,538.49	470,940.22	503,478.71
1918	42,654.99	457,006.85	499,661.84
1919	42,921.95	499,209.37	542,131.32
1920	48,363.21	562,270.41	610,633.62
1921	42,037.82	578,143.95	620,181.77
1922	40,678.06	557,787.67	598,465.73
1923	42,370.69	546,815.44	589,186.13
Total	$668,362.67	$6,458,091.66	$7,126,454.33

[fol. 1896] On an 8% capitalization basis, the amount paid for rentals and included in operating expenses for the year 1923 would support a value of $6,830,000.00. The combined items of leasehold expense and rentals would support a value of $7,360,000.00 on the same basis.

If you desire any further information in addition to that included above, we will be glad to secure same from our working papers.

Very truly yours, Arthur Anderson & Co., Certified Public Accountants.

UNITED FUEL GAS C

VALUATION PLACE

UNITED STATES NATURAL

AND UNITED FUEL GAS COMP

Particulars	West Acres
OPERATED ACREAGE:	
Leaseholds-	
Gas and Oil Rights	12,493.
Gas Rights- South Penn Oil Company Owns Oil	5,469.
Gas Rights- Ohio Fuel Supply Company Owns Oil	911.
Gas Rights- Others Own Oil Rights	1,604.
Total Leaseholds	20,478.
Mineral and Gas Rights in Fee	1,043.
Total Operated Acreage	21,51[illegible]
UNOPERATED ACREAGE:	
Leaseholds-	
Gas and Oil Rights	82,348
Gas Rights- South Penn Oil Company Owns Oil	597,6[illegible]
Gas Rights- Ohio Fuel Supply Company Owns Oil	243,6[illegible]
Gas Rights- Others Own Oil Rights	25,9[illegible]
Total Leaseholds	920,7[illegible]
Mineral and Gas Rights in Fee-	
Gas and Oil Rights	67[illegible]
Gas Rights Others Own Oil Rights	6,8[illegible]
Mineral Rights	2,07[illegible]
Total Mineral and Gas Rights in Fee	9,5[illegible]
Real Estate and Surface Rights	13,[illegible]
Total Unoperated Acreage	944,[illegible]
Total Acreage	965,7[illegible]

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

VALUATION PLACED UPON ACREAGE ACQUIRED FROM

UNITED STATES NATURAL GAS COMPANY, HOPE NATURAL GAS COMPANY

AND UNITED FUEL GAS COMPANY (OLD COMPANY) AT DATE OF ORGANIZATION

West Virginia		Ohio		Kentucky		Total	
Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
12,493.38	$ 462,515.85	-	$ -	-	$ -	12,493.38	$ 462,515.85
5,469.00	205,036.00	-	-	-	-	5,469.00	205,036.00
911.75	40,687.80	-	-	-	-	911.75	40,687.80
1,604.00	80,200.00	-	-	-	-	1,604.00	80,200.00
20,478.10	$ 788,439.35	-	$ -	-	$ -	20,478.10	$ 788,439.35
1,041.89	48,709.45	-	-	-	-	1,041.89	48,709.45
21,519.99	$ 834,148.80	-	$ -	-	$ -	21,519.99	$ 834,148.80
82,348.83	$ 975,643.27	5,516.75	$5,516.75	84,466.77	$84,466.77	143,332.38	$1,065,626.79
397,658.03	3,246,172.20	-	-	270.00	270.00	397,928.03	3,246,442.20
243,855.96	1,840,185.22	-	-	-	-	243,855.96	1,840,185.22
25,891.93	498,826.68	-	-	-	-	25,891.93	498,826.68
980,731.75	$6,960,827.37	5,516.75	$5,516.75	84,736.77	$84,736.77	1,011,005.27	$6,050,820.89
670.84	$ 24,601.80	-	$ -	460.00	$ 460.00	1,130.84	$ 25,061.80
6,862.40	277,134.70	-	-	-	-	6,862.40	277,134.70
2,079.41	5,636.53	-	-	-	-	2,079.41	5,636.53
9,572.35	$ 308,371.73	-	$ -	460.00	$ 460.00	10,032.35	$ 308,831.73
13,886.97	$ 42,737.84	-	$ -	-	$ -	13,886.97	$ 42,737.84
944,810.07	$6,308,676.64	5,516.75	$5,516.75	83,196.77	$83,196.77	1,034,922.59	$6,397,390.16
963,730.06	$7,142,825.44	5,516.75	$5,516.75	83,196.77	$83,196.77	1,056,443.58	$7,231,538.96

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING VALUE ASSIGNED TO ACREAGE ACQUIRED

FROM UNITED STATES NATURAL GAS COMPANY, HOPE NATURAL GAS COMPANY

AND UNITED FUEL GAS COMPANY (OLD COMPANY) BY IMPORTANT DISTRICTS

Line No.	County	District	Leasehold — Oil and Gas Rights — Acres	Cost	Amount	Leasehold — Gas - Others Own Oil Rights — Acres	Cost	Amount	Property Owned in Fee — Mineral and Gas Rights — Acres	Cost	Amount	Property Owned in Fee — Real Estate — Acres	Cost	Amount	Total — Acres	Cost	Amount	Line No.
(1)	OPERATED ACREAGE:																	(1)
(2)	Kanawha	Big Sandy	1,700.00	$47.16	$ 80,180.00	1,169.00	$39.73	$ 46,450.00	-	$ -	$ -	-	$ -	$ -	2,869.00	$44.14	$ 126,630.00	(2)
(3)	Roane	Curtis	-	-	-	2,374.00	50.00	118,700.00	-	-	-	-	-	-	2,374.00	50.00	118,700.00	(3)
(4)	Roane	Geary	4,268.50	50.00	213,425.00	1,460.00	50.00	73,000.00	444.59	45.46	20,222.95	-	-	-	6,173.09	49.67	306,647.95	(4)
(5)	Roane	Smithfield	1,440.00	50.00	72,000.00	397.00	30.00	11,946.00	-	-	-	-	-	-	1,837.00	45.70	83,946.00	(5)
(6)	Roane	Spencer	-	-	-	541.00	50.00	27,050.00	-	-	-	-	-	-	541.00	50.00	27,050.00	(6)
(7)	Roane	Walton	1,874.00	50.00	93,700.00	1,743.75	27.60	48,477.50	597.30	42.67	25,486.50	-	-	-	4,215.05	39.77	167,664.00	(7)
(8)	All Others		3,210.85	1.00	3,210.85	300.00	1.00	300.00	-	-	-	-	-	-	3,510.85	1.00	3,510.85	(8)
(9)																		(9)
(10)	Total Operated		12,493.35	$37.02	$ 462,515.85	7,984.75	$40.81	$ 325,923.50	1,041.89	$45.67	$ 45,709.45	-	-	$ -	21,519.99	$36.76	$ 834,148.80	(10)
(11)																		(11)
(12)																		(12)
(13)	UNOPERATED ACREAGE:																	(13)
(14)	Clay	Union	2,570.71	$11.86	$ 30,502.65	10,830.75	$20.58	$ 20,850.75	714.21	$ 1.00	$ 714.21	1,016.00	$ 1.00	$ 1,016.00	14,531.67	$36.83	$ 53,083.61	(14)
(15)	Kanawha	Big Sandy	7,431.75	27.04	200,956.75	35,833.69	22.36	787,693.50	384.09	13.39	5,140.45	841.37	5.00	5,206.85	43,690.90	22.82	998,999.55	(15)
(16)	Kanawha	Elk	778.50	22.69	17,504.50	125,350.13	23.87	299,160.97	-	-	-	-	-	-	126,128.63	25.10	316,665.47	(16)
(17)	Jackson	Washington	58.00	1.00	58.00	15,453.80	17.70	27,355.00	-	-	-	-	-	-	15,511.80	17.67	27,413.00	(17)
(18)	Roane	Curtis	-	-	-	18,398.50	19.74	363,246.00	-	-	-	-	-	-	18,398.50	19.74	363,246.00	(18)
(19)	Roane	Geary	9,907.16	36.59	360,291.60	40,196.84	27.08	1,088,365.10	3,788.37	43.17	163,526.86	2,101.94	5.91	12,415.10	55,994.33	29.37	1,644,598.65	(19)
(20)	Roane	Harper	-	-	-	18,287.00	27.23	49,795.75	-	-	-	-	-	-	18,287.00	27.23	49,795.75	(20)
(21)	Roane	Reedy	-	-	-	13,856.00	11.21	15,545.50	-	-	-	-	-	-	13,856.00	11.21	15,545.50	(21)
(22)	Roane	Smithfield	3,817.00	49.43	188,675.00	36,631.50	23.56	863,940.08	26.70	5.00	133.50	-	-	-	40,475.20	26.00	1,052,748.58	(22)
(23)	Roane	Spencer	-	-	-	36,429.16	11.75	427,862.50	122.06	5.00	610.30	-	-	-	36,551.22	11.72	428,472.80	(23)
(24)	Roane	Walton	2,629.84	50.00	131,497.00	19,414.83	27.96	543,190.25	3,174.84	42.17	133,884.25	325.98	50.00	16,299.00	25,545.59	32.29	824,870.50	(24)
(25)	All Others		116,139.29	1.00	116,139.29	498,188.70	1.00	498,188.70	1,822.17	1.00	1,822.17	9,800.59	1.00	9,800.59	626,950.75	1.00	626,950.75	(25)
(26)																		(26)
(27)	Total Unoperated		143,332.35	$ 7.44	$1,065,626.79	867,672.95	$ 5.75	$4,985,194.10	10,032.44	$30.46	$305,831.73	13,885.88	$ 3.08	$42,737.54	1,034,923.89	$ 6.16	36,399,390.16	(27)
(28)																		(28)
(29)	Total Acreage		155,825.70	$ 9.80	$1,528,142.64	875,657.67	$ 6.06	$5,311,117.60	11,074.33	$31.76	$351,541.18	13,885.88	$ 3.08	$42,737.54	1,056,443.58	$ 6.85	37,233,538.96	(29)
(30)																		(30)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

BOOK COST AND DISTRIBUTION OF OPERATED ACREAGE

AS OF DECEMBER 31, 1925

Particulars	West Virginia		Kentucky		Total	
	Acres	Amount	Acres	Amount	Acres	Amount
OPERATED GAS ACREAGE:						
Leaseholds-						
Gas and Oil Rights	14,118.46	$ 458,982.11	286.00X	$ 19.84	13,852.46	$ 458,971.65
Gas Rights- Virginian Gasoline and Oil Company Owns Oil Rights	17,405.50	479,911.24	4,601.50	3,822.37	22,007.00	483,733.61
Gas Rights- South Penn Oil Company Owns Oil Rights	17,791.06	640,514.10	-	-	17,791.06	640,514.10
Gas Rights- Ohio Fuel Oil Company Owns Oil Rights	5,349.77	154,646.19	-	-	5,349.77	154,646.19
Gas Rights- Other Parties Own Oil Rights	6,691.97	177,680.25	-	-	6,691.97	177,680.25
Total Leaseholds	61,356.76	$1,911,703.89	4,315.50	$3,841.91	65,672.26	$1,915,545.80
Mineral Rights and Holdings in Fee-						
Gas and Oil Rights in Fee	60.84	$ 1,372.55	-	$ -	60.84	$ 1,372.55
Gas Rights in Fee	621.75	6,209.17	-	-	621.75	6,209.17
Gas Rights in Fee - Virginian Gasoline and Oil Company Owns Oil Rights	2,199.49	83,564.62	-	-	2,199.49	83,564.62
Absolute in Fee - Virginian Gasoline and Oil Company Owns Oil Rights	232.45	575.00	-	-	232.45	575.00
Absolute in Fee - Other Parties Own Oil Rights	42.45	875.00	-	-	42.45	875.00
Fee Minerals - Virginian Gasoline and Oil Company	71.50	1,283.00	-	-	71.50	1,283.00
Total Fee Property	3,228.46	$ 93,849.34	-	$ -	3,228.46	$ 93,849.34
Total Operated Gas Acreage	64,585.22	$2,005,553.23	4,315.50	$3,841.91	68,900.72	$2,009,395.14
OPERATED OIL ACREAGE (Total Book Value Assigned to Virginian Gasoline and Oil Company):						
Oil Rights- United Fuel Gas Company Owns Gas Rights	10,028.55	$ 238,145.87	327.60	$ 90.60	10,356.15	$ 238,236.47
Mineral and Gas Rights in Fee	127.45	2,871.45	-	-	127.45	2,871.45
Total Operated Oil Acreage	10,156.00	$ 238,017.32	327.60	$ 90.60	10,483.60	$ 238,107.92
Total Operated Acreage	74,741.22	$2,243,570.55	4,643.10	$3,932.51	79,384.32	$2,247,503.06

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

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BOOK COST AND DISTRIBUTION OF UNOPERATED ACREAGE AS OF DECEMBER 31, 1925

Particulars	West Virginia		Ohio		Kentucky		Totals	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
UNITED FUEL GAS COMPANY:								
Leaseholds-								
Oil and Gas Rights	79,628.20	$1,068,858.44	255.00	$ 63.75	29,812.50	$ 3,695.23	109,695.70	$1,072,617.42
Gas Rights- Virginian Gasoline and Oil Company Owns Oil Rights	282,316.45	837,348.55	-	-	75,308.35	24,921.94	357,624.80	862,270.49
Gas Rights- South Penn Oil Company Owns Oil Rights	126,697.55	1,489,755.80	-	-	-	-	126,697.55	1,489,755.80
Gas Rights- Ohio Fuel Oil Company Owns Oil Rights	77,163.15	243,844.63	-	-	-	-	77,163.15	243,844.63
Gas Rights- Other Parties Own Oil Rights	36,060.45	321,837.93	-	-	-	-	36,060.45	321,837.93
Total Leaseholds	591,865.80	$3,961,345.35	255.00	$ 63.75	105,120.85	$28,617.17	697,241.65	$3,989,826.27
Mineral and Gas Rights-								
Oil and Gas in Fee	681.21	$ 97,431.10	-	$ -	-	$ -	681.21	$ 97,431.10
Gas in Fee- Virginian Gasoline and Oil Co. Owns Oil Rights	14,709.32	465,951.65	-	-	308.40	649.50	15,017.72	466,601.15
Gas in Fee- Ohio Fuel Oil Co. Owns Oil Rights	26.00	651.00	-	-	-	-	26.00	651.00
Gas in Fee	979.25	5,582.58	-	-	-	-	979.25	5,582.58
Oil in Fee	432.00	225.80	-	-	-	-	432.00	225.80
Minerals- Virginian Gasoline and Oil Co. Owns Oil Rights	13,259.32	41,570.81	-	-	-	-	13,259.32	41,570.81
Total Mineral and Gas Rights	30,087.10	$ 611,392.94	-	$ -	308.40	$ 649.50	30,395.50	$ 612,042.44
Real Estate-								
Absolute in Fee	48.93	$ 39,744.74	.14	$2,438.91	41.50	$ 6,692.55	90.57	$ 48,876.20
Absolute in Fee- Virginian Gasoline Oil Co. Owns Oil Rights	7,676.53	56,753.98	-	-	-	-	7,676.53	56,753.98
Surface Only	82.61	12,128.43	-	544.37	-	-	82.61	12,672.80
Miscellaneous	39.50	3,243.17	-	48.28	-	362.00	39.50	3,653.45
Total Real Estate	7,847.57	$ 111,870.32	.14	$3,028.56	41.50	$ 6,737.55	7,889.21	$ 121,636.43
Total United Fuel Gas Company	629,800.47	$4,684,608.61	255.14	$3,092.31	105,470.75	$35,824.22	735,526.36	$4,723,525.14
VIRGINIAN GASOLINE AND OIL COMPANY	-	481.67	-	-	-	-	-	481.67
Total Unoperated Acreage	629,800.47	$4,685,090.28	255.14	$3,092.31	105,470.75	$35,824.22	735,526.36	$4,724,006.81

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[illegible] FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING TOTAL ACREAGE ACQUIRED AND ABANDONED

FROM JULY 1, 1929 TO DECEMBER 31, 1932

Particulars	Leases Acquired		Leases Abandoned		Oil Rights Sold		Sale of Properties Inventory Adjustments, Etc.		Net Additions	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
PROPERTIES PURCHASED:										
United States Natural Gas Co.-										
Hope Natural Gas Co. and United Fuel Gas Company (Old Company)	1,056,443.58	$7,233,538.96	-	$ -	-	$ -	-	$ -	1,056,443.58	$7,233,538.96
Davenport Oil and Gas Co.	1,027.50	117,047.66	-	-	-	-	-	-	1,027.50	117,047.66
Interstate Gas Co.	9,720.00	186,789.60	×1,379.50	×107,241.24	-	-	×4,469.80	(A) 79,719.44	×329.00	×171.08
Cabin Creek Gas Company	8,005.00	112,500.00	-	-	-	-	-	-	8,005.00	112,500.00
Miscellaneous	50,476.50	78,048.43	-	-	-	-	-	-	50,476.50	78,048.43
Total Properties Purchased	1,115,672.58	$7,727,924.65	×1,379.50	$ 107,241.24	-	-	×4,469.80	$ 79,719.44	1,115,823.58	$7,540,963.97
NET ADDITIONS SINCE ORIGINAL PURCHASE OF PROPERTIES:										
Six Months Ended December 31, 1909	30,617.12	$ 16,215.21	-	$ -	-	$ -	-	$ -	30,617.12	$ 16,215.21
Year Ended December 31,-										
1910	109,680.66	36,976.96	×873.39	×1,641.76	-	×303.75	×14,954.57	(B)×26,000.00	93,882.70	9,031.48
1911	96,738.37	21,277.95	×818,913.73	×415,436.56	-	×2,310.62	-	-	×432,177.36	×396,469.22
1912	83,465.21	96,942.64	×44,639.80	×42,510.35	×883.25	×3,170.63	×14,294.58	(B)×3,322.30	24,007.28	41,933.66
1913	144,331.68	48,138.50	×41,972.23	×21,263.03	×679.00	×4,759.09	×1,356.76	(B) × 484.13	98,421.67	21,751.75
1914	30,657.44	52,497.07	×132,031.22	×138,578.55	× 15.25	×12,971.71	-	-	×101,409.03	×89,053.19
1915	89,570.64	71,366.73	×47,389.08	× 91,638.10	-	× 4,433.86	-	-	38,241.58	×24,479.23
1916	75,945.88	181,710.93	×112,641.65	×155,841.22	×132.00	×7,325.31	-	-	× 36,827.77	18,544.39
1917	68,397.25	110,374.56	×86,465.80	× 141,662.37	-	× 2,686.23	-	-	×20,068.25	×33,976.85
1918	12,301.69	37,051.24	×109,904.57	×171,077.47	-	×4,379.79	-	-	× 97,602.88	×138,805.02
1919	151,973.23	42,795.61	×49,899.21	× 66,201.46	-	×83,544.85	-	-	102,074.02	×48,750.72
1920	46,138.99	111,416.67	×23,459.29	× 38,124.61	-	×3,734.57	-	×500.00	22,669.70	69,007.49
1921	38,071.23	62,133.38	× 61,758.47	× 219,608.89	×215.00	×3,451.90	-	-	×23,902.24	×152,014.61
1922	27,718.98	97,892.02	×25,498.47	× 34,128.98	-	×157.77	×43.97	×15,769.76	2,179.72	47,765.56
1923	31,881.74	111,673.36	×12,589.58	× 14,116.61	×174.33	×7,931.02	-	-	19,020.83	89,625.73
Total Net Additions	1,031,696.09	$1,098,673.05	×1,504,006.96	×1,538,917.83	×1,048.63	×80,193.10	×30,652.20	×$ 50,010.19	×506,712.90	×$ 569,454.10
Total Acreage	2,147,330.67	$8,826,597.67	×1,505,649.46	×1,643,159.07	×1,048.63	×80,193.10	×35,121.70	×131,735.68	814,910.68	$6,971,509.87

A - Sale of Property to Columbia Gas and Electric Company.
B - Inventory Adjustments.

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT OF OPERATED ACREAGE ACQUIRED, ABANDONED

AND TRANSFERRED FROM JULY 1, 1909 TO DECEMBER 31, 1925

Particulars	Leases Acquired		Leases Abandoned		Oil Rights Sold		Transfers from Unoperated Acreage		Sale of Properties, Inventory Adjustments, Etc.		Net Additions	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
PROPERTIES PURCHASED:												
United States Natural Gas Co., Hope Natural Gas Co. and United Fuel Gas Co. (Old Company)	21,519.99	$ 834,148.80	-	$ -	-	$ -	-	$ -	-	$ -	21,519.99	$ 834,148.80
Davenport Oil and Gas Co.	1,027.50	117,047.66	-	-	-	-	-	-	-	-	1,027.50	117,047.66
Miscellaneous	2,481.00	48,624.01	-	-	-	-	-	-	-	-	2,481.00	48,624.01
Total Properties Purchased	25,028.49	$ 996,820.47	-	$ -	-	$ -	-	$ -	-	$ -	25,028.49	$ 996,820.47
NET ADDITIONS SINCE ORIGINAL PURCHASE OF PROPERTIES:												
Six Months Ended Dec. 31, 1909	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -	-	$ -
Year Ended Dec. 31,												
1910	-	-	-	-	-	-	850.00	1,706.96	-	-	850.00	1,706.96
1911	-	-	X1,317.00	X1,181.00	-	-	11,063.14	138,976.06	-	-	9,746.14	137,794.06
1912	1,001.00	5,944.88	X29.88	-	-	-	3,817.25	68,975.23	X5,799.26	X161,101.77*	X4,310.26	X86,181.66
1913	50.00	163.88	X898.18	X898.18	X100.00	X600.00	7,416.33	186,747.03	X336.00	6,780.00*	6,432.15	192,592.70
1914	13.66	474.60	X337.00	X982.00	-	-	6,302.91	182,082.55	-	-	5,979.57	181,596.15
1915	219.67	2,288.33	X605.00	X2,004.68	-	-	4,908.08	178,996.48	-	-	4,722.75	179,250.13
1916	25.30	18,896.56	-	X3,618.88	-	-	4,036.82	98,570.63	-	-	4,062.12	112,848.61
1917	409.00	9,004.28	X306.00	X780.13	-	-	9,866.32	226,858.73	-	-	9,970.32	235,082.89
1918	77.20	776.00	X293.00	X366.00	-	-	3,996.33	30,850.28	-	-	3,779.53	31,261.28
1919	234.00	7,918.64	26.41	1,136.00	-	-	1,686.50	34,665.72	-	-	1,946.91	43,717.36
1920	2.24	1,117.27	X936.13	X12,660.81	-	X25.00	3,124.71	55,097.15	-	-	2,386.83	43,723.91
1921	1,478.87	14,210.67	X1,034.05	X12,667.05	-	-	2,969.15	16,447.03	-	-	3,414.07	18,000.65
1922	14.90	7,277.43	X867.50	X4,803.91	-	-	X7,936.34	66,938.44	-	-	X8,678.94	69,411.96
1923	-	1,189.84	X613.00	X14,273.66	-	X8.70	3,874.06	122,976.70	-	-	3,361.06	109,878.58
Total Net Additions	3,522.94	$ 67,825.77	X5,082.69	X81,875.86	X100.00	X634.70	86,874.26	$1,380,888.96	X9,135.26	X154,321.77	43,872.23	$1,260,682.59
Total Operated Acreage	28,554.43	$1,064,046.24	X5,082.69	X81,875.86	X100.00	X634.70	86,874.26	$1,380,888.96	X9,135.26	X154,321.77	68,900.72	$2,247,503.06

*Inventory Adjustments

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING UNOPERATED ACREAGE ACQUIRED, ABANDONED AND TRANSF

FROM JULY 1, 1909 TO DECEMBER 31, 1923

Particulars	Leases Acquired		Leases Abandoned		Oil Rights Sold	
	Acres	Amount	Acres	Amount	Acres	Amount
PROPERTIES PURCHASED:						
United States Natural Gas Company, Hope Natural Gas Company, and United Fuel Gas Company (Old Company)	1,034,923.59	$6,399,390.16	-	$ -	-	$ -
Interstate Gas Company	9,730.00	186,789.60	X5,579.50	X107,241.24	-	-
Miscellaneous	47,995.50	32,424.42	-	-	-	-
Cabin Creek Gas Co.	8,005.00	112,500.00	-	-	-	-
Total Properties Purchased	1,100,644.09	$6,731,104.18	X5,579.50	$ 107,241.24	-	$ -
NET ADDITIONS SINCE ORIGINAL PURCHASE OF PROPERTIES:						
Six Months Ended December 31, 1909	30,817.12	$ 16,215.21	-	$ -	-	$ -
Year Ended December 31,						
1910	109,680.66	36,976.96	X 873.39	X 1,641.76	-	X303.75
1911	96,736.37	21,277.95	X527,596.73	X414,254.55	-	X2,310.62 X1
1912	82,464.21	90,997.96	X44,610.55	X 43,516.35	X 523.25	X2,170.63 X
1913	142,381.68	48,034.65	X41,374.05	X 20,665.55	X479.00	X4,259.09 X
1914	30,623.78	52,022.47	X131,694.22	X127,616.55	X 15.25	X12,971.71 X
1915	85,350.97	69,328.40	X 46,924.05	X 89,627.45	-	X 4,433.86 X
1916	75,920.58	164,814.37	X112,641.65	X 153,222.68	X 132.00	X 7,325.31 X
1917	67,988.25	101,370.27	X 88,160.60	X 140,882.28	-	X2,688.23 X
1918	12,224.49	36,275.24	X109,611.57	X 170,712.47	-	X 4,579.78 X
1919	151,739.23	34,878.95	X 49,925.62	X 69,336.48	-	X23,344.85 X
1920	46,126.75	110,299.40	X 22,729.17	X26,659.10	-	X 3,759.57 X
1921	36,592.26	47,922.71	X 80,724.42	X198,039.24	X228.00	X 3,451.90 X
1922	27,704.06	90,544.59	X 24,937.77	X 29,325.02	-	X 137.77
1923	31,881.74	110,488.12	X 12,173.58	157.05	X174.33	X 7,921.32
Total Net Additions	1,028,132.15	$1,031,447.25	X1,293,977.27	X$1,484,342.17	X1,548.83	X$79,658.40 X
Total Unoperated Acreage	2,128,776.24	$7,762,551.43	X1,299,556.77	X$1,591,583.41	X1,548.85	X$79,658.40 X

(A) Sale of Property to Columbia Gas and Electric Co
(B) Inventory adjustments.

(X Denotes red in copy.)

ND SUBSIDIARIES

D. ABANDONED AND TRANSFERRED

R 31, 1923

Oil Rights Sold		Transfers to Operated Acreage		Sale of Properties, Inventory Adjustments, Etc.		Net Additions	
Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
-	$ -	-	$ -	-	$ -	1,034,923.89	$6,399,390.16
-	-	-	-	×4,469.50	×79,719.44(A)	×329.00	×171.08
-	-	-	-	-	-	47,995.80	32,424.42
-	-	-	-	-	-	8,008.00	112,500.00
-	$ -	-	$ -	×4,469.50	$ 79,719.44	1,090,595.09	$6,544,143.50
-	$ -	-	$ -	-	$ -	30,617.12	$ 16,215.21
-	×303.75	×850.00	×1,706.95	×14,994.57	×88,000.00(B)	93,002.70	7,324.50
-	×2,310.62	×11,063.14	×138,976.05	-	-	×441,923.50	×534,263.27
×523.25	×2,170.63	×3,517.25	×68,975.23	×5,495.60	151,779.47(B)	28,317.56	128,115.22
×479.00	×4,259.09	×7,416.33	×186,747.03	×1,022.78	×7,204.13(B)	91,989.52	×170,840.95
×15.25	×12,971.71	×6,302.91	×162,082.55	-	-	×107,388.60	×250,648.34
-	×4,433.86	×4,908.08	×178,996.48	-	-	33,518.84	×205,729.30
×132.00	×7,325.31	×4,036.82	×96,570.68	-	-	×40,889.89	×94,304.22
-	×2,688.23	×9,866.32	×226,658.73	-	-	×50,036.57	×269,068.94
-	×4,579.79	×3,998.33	×30,850.26	-	-	×101,382.41	×169,667.28
-	×23,344.85	×1,686.50	×24,665.72	-	-	100,127.11	×92,468.10
-	×3,759.57	×3,124.71	×55,097.15	-	×500.00	20,272.87	25,283.58
×228.00	×3,461.90	×2,969.15	×16,447.03	-	-	×47,326.31	×170,015.46
-	×137.77	×936.34	×66,938.44	×43.97	×15,769.78	10,658.66	×21,626.40
×174.33	×7,921.32	×3,874.06	×122,976.70	-	-	15,659.77	×20,252.85
1,548.83	×79,658.40	×56,674.26	×1,389,888.95	×21,516.92	$102,305.58	×344,585.13	×1,820,136.69
1,548.83	×79,658.40	×56,674.26	×1,389,888.95	×26,986.42	$ 22,586.14	746,009.96	$4,724,006.81

a Gas and Electric Company.

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING NEW LEASES, RENEWALS, AND FEE PROPERTY

ACQUIRED FROM JULY 1, 1909 TO DECEMBER 31, 1923

Particulars	New Leases		Renewal Payments	Fee Property		Unaccounted For		Total Acreage Acquired	
	Acres	Amount		Acres	Amount	Acres	Amount	Acres	Amount
OPERATED ACREAGE:									
Six Months Ended December 31-									
1 9 0 9	-	$ -	$ -	-	$ -	-	$ -	-	$ -
Year Ended December 31-									
1 9 1 0	-	-	-	-	-	-	-	-	-
1 9 1 1	-	-	-	-	-	-	-	-	-
1 9 1 2	1,001.00	3,944.88	-	-	-	-	-	1,001.00	3,944.88
1 9 1 3	50.00	183.85	-	-	-	-	-	50.00	183.85
1 9 1 4	13.66	474.60	-	-	-	-	-	13.66	474.60
1 9 1 5	219.67	2,288.33	-	-	-	-	-	219.67	2,288.33
1 9 1 6	18.80	13,396.96	-	6.50	3,500.00	-	-	25.30	16,896.96
1 9 1 7	409.00	9,004.28	-	-	-	-	-	409.00	9,004.28
1 9 1 8	77.20	776.00	-	-	-	-	-	77.20	776.00
1 9 1 9	234.00	7,916.66	-	-	-	-	-	234.00	7,916.66
1 9 2 0	2.00	-	-	.24	1,117.27	-	-	2.24	1,117.27
1 9 2 1	1,477.25	7,621.42	-	1.72	6,589.25	-	-	1,478.97	14,210.67
1 9 2 2	14.90	7,277.43	-	-	-	-	-	14.90	7,277.43
1 9 2 3	-	1,185.24	-	-	-	-	-	-	1,185.24
Total Operated Acreage	3,517.48	$ 54,019.25	$ -	8.46	$ 11,206.52	-	$ -	3,525.94	$ 67,225.77
UNOPERATED ACREAGE:									
Six Months Ended December 31-									
1 9 0 9	-	$ -	$ -	-	$ -	30,817.12	$ 16,218.21	30,817.12	$ 16,218.21
Year Ended December 31-									
1 9 1 0	48,163.18	21,377.20	1,614.29	166.00	1,207.30	21,349.48	12,777.97	109,680.66	36,976.96
1 9 1 1	20,391.28	11,392.58	6,346.29	.35	2,506.78	6,343.74	832.30	26,736.37	21,277.95
1 9 1 2	75,417.96	25,210.77	7,307.08	-	27,430.38	7,046.26	31,049.73	82,464.21	90,997.96
1 9 1 3	141,830.18	23,980.58	16,176.08	6.52	7,819.39	444.98	X1,911.40	142,281.68	48,084.65
1 9 1 4	29,942.12	12,903.11	33,969.70	27.23	5,380.42	654.43	X440.96	30,623.78	52,022.47
1 9 1 5	79,105.33	17,139.76	22,633.84	9.08	13,666.08	6,236.50	18,888.70	85,350.97	69,328.40
1 9 1 6	62,430.62	84,644.46	28,668.14	84.15	42,427.53	13,465.81	39,064.22	75,920.58	164,814.37
1 9 1 7	68,704.01	28,588.82	47,433.16	40.38	18,589.37	2,243.68	6,818.72	67,988.25	101,370.27
1 9 1 8	10,809.02	2,974.83	18,001.33	106.52	1,430.00	1,308.95	13,869.08	12,224.49	36,273.24
1 9 1 9	148,448.99	12,389.72	14,467.47	3.86	4,134.25	3,052.36	3,887.51	151,739.23	34,878.95
1 9 2 0	43,688.22	81,098.14	34,692.98	1,493.81	21,868.67	X1,026.25	2,619.59	46,126.75	110,299.40
1 9 2 1	36,113.78	12,989.45	19,948.69	31.81	17,901.44	446.67	X 2,516.57	36,592.26	47,922.71
1 9 2 2	26,676.44	31,131.49	15,134.39	100.37	44,389.86	X1,074.75	X111.15	27,704.06	90,844.59
1 9 2 3	29,733.02	10,811.49	72,949.98	64.43	22,497.41	2,084.89	3,529.27	31,881.74	110,488.12
Total Unoperated Acreage	932,662.14	$318,842.62	$340,843.41	2,076.70	$231,089.30	93,393.31	$141,971.92	1,028,132.15	$1,031,447.25

(X Denotes red in copy.)

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

SUMMARY OF UNOPERATED LEASES ACQUIRED BY DISTRICTS AND PERIODS

FROM 1910 TO 1923, INCLUSIVE

District	County	1910 to 1914, Inclusive			1915 to 1920, Inclusive			1921 to 1923, Inclusive			T o t a l		
		Acres	Amount	Cost	Acres	Amount	Cost	Acres	Amount	Cost	Acres	Amount	Cost
WEST VIRGINIA:													
Crook	Boone	3,097.00	$ 595.75	$0.13	5,721.00	$ -	$ -	8.00	$ 8.00	$1.00	11,826.00	$ 603.75	$0.05
Peytonia	Boone	872.00	113.50	0.13	-	-	-	1,780.00	-	-	2,653.00	113.50	0.04
Scott	Boone	3,930.68	454.53	0.12	466.00	64.75	0.14	3.00	3.00	1.00	4,399.68	522.28	0.12
Sherman	Boone	1,966.66	268.75	0.13	11,435.05	1,396.30	0.12	-	-	-	13,401.71	1,665.05	0.12
Washington	Boone	7,656.34	1,226.68	0.16	952.00	121.75	0.13	1,168.00	286.56	0.25	9,776.34	1,634.96	0.17
Grant	Cabell	3,908.74	472.42	0.12	8,627.06	2,942.39	0.34	4,996.25	1,327.96	0.27	17,531.05	4,742.75	0.27
Huntington	Cabell	915.25	14.00	0.02	2,260.57	298.00	0.13	174.00	87.00	0.50	3,354.82	399.00	0.12
Union	Cabell	3,421.60	430.72	0.13	7,211.50	439.80	0.07	2,394.80	593.66	0.25	13,017.90	1,463.88	0.11
Barboursville	Cabell	100.00	2.00	0.02	-	-	-	-	-	-	100.00	2.00	0.02
Center	Calhoun	12.00	25.00	2.08	1,396.00	81.76	0.05	1.87	34.17	34.50	1,369.87	140.93	0.10
Lee	Calhoun	9.37	1.00	0.10	-	-	-	-	-	-	9.37	1.00	0.10
Henry	Clay	4,044.00	965.25	0.24	4,497.50	1,531.72	0.34	3,470.75	486.50	0.14	12,002.25	2,983.47	0.25
Otter	Clay	309.00	51.37	0.17	2,973.00	1,413.06	0.47	1,974.00	561.62	0.28	5,252.00	2,026.05	0.40
Union	Clay	1,833.50	116.71	0.06	4,405.30	531.26	0.12	145.50	382.50	2.62	6,384.20	1,002.47	0.16
Buffalo	Clay	75.00	50.00	0.66	210.00	52.50	0.25	-	-	-	285.00	102.50	0.37
Falls	Fayette	960.00	21.25	0.04	9,500.36	2,500.00	0.26	4,000.00	1,000.00	0.25	14,460.36	3,521.25	0.25
Kanawha	Fayette	7,333.00	-	-	-	-	-	-	-	-	7,333.00	-	-
Ravenswood	Jackson	1,935.00	500.83	0.26	2,389.00	2,175.00	0.91	450.00	147.50	0.33	4,774.00	2,823.33	0.60
Ripley	Jackson	15,136.00	1,324.99	0.09	14,320.42	2,714.63	0.19	3,163.00	666.61	0.21	32,639.42	4,706.23	0.14
Washington	Jackson	10,762.17	4,290.58	0.41	9,496.06	11,766.09	1.23	1,222.63	1,156.81	0.95	21,480.86	17,213.48	0.80
Cabin Creek	Kanawha	38,362.72	3,579.80	0.09	28,055.90	24,982.93	0.89	5.00	1,000.00	200.00	66,424.63	29,562.43	0.44
Big Sandy	Kanawha	7,568.94	8,325.63	1.45	1,203.04	6,159.06	5.12	323.18	30,218.29*	93.50	9,115.16	41,702.98*	8.15
Charleston	Kanawha	1,050.54	975.60	0.93	612.78	219.58	0.36	120.00	30.00	0.25	1,784.32	1,225.38	0.70
Elk	Kanawha	17,127.48	10,985.74	0.64	16,677.83	12,480.96	0.75	636.64	1,070.16	1.68	34,443.97	24,544.86	0.71
Jefferson	Kanawha	6,101.00	2,469.77	0.40	4,386.50	3,330.75	0.76	-	-	-	12,487.50	5,800.52	0.46
Loudon	Kanawha	9,283.50	2,270.89	0.24	14,779.50	1,308.68	0.08	131.82	86.81	0.66	24,190.82	3,666.32	0.15
Malden	Kanawha	6,337.31	1,617.87	0.19	122.00	176.00	1.44	122.50	115.75	0.94	6,581.81	1,911.62	0.29
Poca	Kanawha	536.75	111.50	0.21	2,272.09	606.75	0.27	-	-	-	2,808.84	717.25	0.26
Union	Kanawha	4,946.00	2,081.17	0.42	11,997.25	2,370.82	0.20	1,196.00	452.00	0.39	18,191.25	4,913.99	0.27
Washington	Kanawha	725.00	10.00	0.01	-	-	-	-	-	-	725.00	10.00	0.01
Carrel	Lincoln	159.50	3.00	0.02	2,287.00	629.50	0.27	360.25	-	-	2,746.75	632.50	0.23
Duval	Lincoln	3,613.13	660.06	0.18	1,510.81	783.87	0.52	-	-	-	5,123.94	1,443.93	0.28
Hearts Creek	Lincoln	1,968.80	498.52	0.25	380.00	61.80	0.16	-	-	-	2,348.80	559.05	0.24
Laurel Hill	Lincoln	157.00	151.00	0.96	-	-	-	-	-	-	157.00	151.00	0.96
Sheridan	Lincoln	891.50	80.50	0.18	822.00	190.25	0.19	113.00	1,430.00	11.44	1,236.50	1,618.75	0.21
Grant	Jackson	-	-	-	2,148.46	1,691.80	0.77	288.00	226.00	1.10	2,353.46	1,883.50	0.80
Union	Jackson	-	-	-	3,376.00	600.80	0.18	1,333.00	396.00	0.30	4,611.00	796.50	0.17
Washington	Lincoln	-	-	-	887.00	143.00	0.16	84.00	6.00	0.09	921.00	149.00	0.16
Otter	Braxton	-	-	-	11,648.42	28,979.91	2.49	233.00	-	-	12,093.42	28,979.91	2.36

District	County	1910 to 1914, inclusive			1915 to 1920, inclusive			1921 to 1923, inclusive			T o t a l		
		Acres	Amount	Cost	Acres	Amount	Cost	Acres	Amount	Cost	Acres	Amount	Cost
WEST VIRGINIA (Continued):													
Logan	Logan	14,878.40	$ 873.73	$0.06	316.00	$ 60.00	$0.19	-	$ -	$ -	14,894.40	$ 933.73	$0.06
Chapmansville	Logan	14,761.75	814.37	0.06	1,110.80	125.40	0.11	1,493.41	379.28	0.25	17,366.66	1,319.22	0.08
Tridelphia	Logan	3,773.00	15.00	-	-	-	-	-	-	-	3,773.00	15.00	-
Union	Mason	4,768.50	497.30	0.10	4,291.00	439.76	0.10	-	-	-	9,059.50	937.06	0.01
Raymond	Mason	153.00	2.00	-	-	-	-	13,056.50	1,246.90	0.10	13,209.50	1,248.90	0.09
Arbuckle	Mason	1.00	1.00	0.01	7,442.17	6,000.50	0.81	-	-	-	7,443.17	6,001.50	0.80
Harvey	Mingo	3,037.12	32.00	0.01	148.00	20.00	0.14	-	-	-	3,185.12	52.00	0.02
Lee	Mingo	1,969.00	14.00	-	-	-	-	-	-	-	1,969.00	14.00	-
Warfield	Mingo	8,779.70	1,649.58	0.19	1,129.00	128.50	0.11	96.00	1.00	0.01	10,024.70	1,779.08	0.18
Hardee	Mingo	16,070.84	46.81	-	1,323.80	167.50	0.13	-	-	-	17,394.24	216.31	0.01
Morgan	Mongolia	2,024.00	1,824.00	0.76	-	-	-	-	-	-	2,024.00	1,824.00	0.76
Jefferson	Nicholas	551.00	23.48	0.04	-	-	-	-	-	-	551.00	23.48	0.04
Hamilton	Nicholas	237.00	53.00	0.22	-	-	-	178.40	713.60	4.00	415.40	766.60	1.84
Buffalo	Putnam	253.00	1.00	-	1,256.00	310.68	0.24	4,076.83	958.18	0.23	5,588.83	1,269.83	0.23
Curry	Putnam	6,739.25	5,248.84	0.78	3,345.75	970.00	0.29	3,803.25	352.67	0.09	13,891.25	6,571.21	0.47
Poca	Putnam	1,309.50	168.02	0.13	3,372.25	1,008.57	0.30	1,788.75	446.43	0.25	6,467.50	1,620.02	0.25
Teays Valley	Putnam	2,394.46	147.00	0.06	10,312.83	4,107.84	0.40	2,439.86	536.91	0.22	15,151.35	4,791.45	0.32
Union	Putnam	1,884.05	108.13	0.06	224.00	97.75	0.44	-	-	-	2,108.05	202.88	0.10
Curtis	Roane	363.69	4,874.09	13.38	4,069.72	3,971.87	0.97	337.64	613.50	1.82	4,769.05	9,159.46	2.09
Geary	Roane	8,815.04	6,020.37	0.68	2,332.71	10,491.99	4.50	914.50	800.43	0.88	12,062.25	17,313.79	1.43
Harper	Roane	836.23	1,072.15	1.15	2,486.60	2,719.74	1.09	575.00	506.50	0.88	3,897.83	4,298.39	1.07
Smithfield	Roane	1,976.81	8,679.26	4.39	848.97	4,265.97	5.14	369.90	1,167.11	3.16	3,197.68	14,212.34	4.44
Spencer	Roane	6,068.68	8,736.98	0.96	3,333.33	3,782.24	1.17	422.81	132.00	0.31	9,724.82	8,651.22	0.89
Walton	Roane	3,153.72	1,613.34	0.46	529.26	4,696.54	8.88	34.06	562.98	16.53	3,717.04	6,874.83	1.85
Butler	Wayne	1,785.00	126.75	0.07	2.00	-	-	-	-	-	1,787.00	126.75	0.07
Ceredo	Wayne	4,289.93	868.26	0.14	2,508.00	21.00	0.01	-	-	-	6,797.93	889.26	0.09
Union	Wayne	14,343.00	481.80	0.03	748.17	166.37	0.22	-	-	-	15,091.17	617.87	0.04
Lincoln	Wayne	7,813.75	1,479.13	0.19	922.00	64.50	0.07	-	-	-	8,734.75	1,543.63	0.18
Stonewall	Wayne	7,628.82	804.61	0.10	984.00	256.50	0.26	-	-	-	8,612.82	1,060.11	0.12
Spring	Wirt	45.00	1.00	0.02	943.50	238.00	0.25	-	-	-	988.50	239.00	0.24
Scott	Putnam	-	-	-	2,337.50	584.37	0.25	1,442.62	1,323.00	0.92	3,780.12	1,907.37	0.50
Marsh Fork	Raleigh	-	-	-	70,249.06	4,229.62	0.06	1,259.00	270.25	0.21	71,508.06	4,499.87	0.06
Reedy	Roane	-	-	-	2,051.00	513.75	0.25	-	-	-	2,051.00	513.75	0.25
Total West Virginia		307,012.63	$84,238.84	$0.27	330,484.09	$161,435.63	$0.50	62,032.24	$51,773.58*	$0.83	699,498.96	$297,445.23*	$0.43
TOTAL KENTUCKY		107,092.58	10,783.66	0.10	91,937.10	8,239.92	0.06	32,493.00	2,858.87	0.09	231,522.68	18,982.65	0.08
TOTAL OHIO		11,640.50	1,814.74	0.16	-	-	-	-	-	-	11,640.50	1,814.74	0.16
Grand Total		425,745.71	$96,837.44	$0.23	412,391.19	$169,775.75	$0.40	94,525.24	$54,632.43	$0.58	932,662.14	$318,242.62	$0.34

*Includes an extraordinary payment of $38,000.00 for 70 acres in Big Sandy District, Kanawha County.

1816

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

UNDEVELOPED LEASES ACQUIRED BY DISTRICTS

FROM 1910 TO 1914, INCLUSIVE

District	County	1910 Acres	1910 Amount	1911 Acres	1911 Amount	1912 Acres	1912 Amount	1913 Acres	1913 Amount	1914 Acres	1914 Amount	Total Acres	Total Amount
WEST VIRGINIA:													
Creek	Boone	-	$ -	109.00	$ 1.00	660.00	$ 6.00	2,338.00	$ 587.75	-	-	3,097.00	$ 595.75
Peytonia	Boone	-	-	581.00	-	-	-	60.00	43.80	233.00	70.00	873.00	113.80
Scott	Boone	-	-	1,230.00	15.00	839.68	149.28	1,728.00	157.25	133.00	138.00	3,930.68	464.53
Sherman	Boone	-	-	966.66	15.75	828.00	311.00	240.00	42.50	-	-	1,966.66	368.75
Washington	Boone	-	-	3,834.00	36.00	2,323.34	695.25	2,441.00	447.40	60.00	60.00	7,658.34	1,228.65
Grant	Cabell	609.00	49.60	1,211.42	10.00	163.00	2.00	1,076.38	237.79	244.00	167.03	3,908.74	472.42
Huntington	Cabell	-	-	325.00	6.00	590.25	8.00	-	-	-	-	915.25	14.00
Union	Cabell	1,311.00	131.10	-	-	-	-	1,701.80	224.82	419.00	76.80	3,431.80	430.72
Barboursville	Cabell	25.00	1.00	75.00	1.00	-	-	-	-	-	-	100.00	2.00
Center	Calhoun	-	-	12.00	25.00	-	-	-	-	-	-	12.00	25.00
Lee	Calhoun	-	-	9.37	1.00	-	-	-	-	-	-	9.37	1.00
Henry	Clay	580.00	2.00	2,930.00	790.50	117.00	22.75	604.00	150.00	3.00	-	4,044.00	965.25
Otter	Clay	80.00	1.00	215.00	50.37	-	-	-	-	-	-	305.00	51.37
Union	Clay	704.00	58.50	58.50	14.62	1,069.00	23.00	-	-	2.00	22.89	1,833.50	118.71
Buffalo	Clay	-	-	75.00	50.00	-	-	-	-	-	-	75.00	50.00
Falls	Fayette	560.00	21.25	-	-	-	-	-	-	-	-	560.00	21.25
Kanawha	Fayette	-	-	7,333.00	-	-	-	-	-	-	-	7,333.00	-
Riverside	Jackson	646.00	174.00	-	-	-	-	1,389.00	326.75	-	-	1,938.00	500.83
Ripley	Jackson	1,309.00	299.98	382.00	34.26	2,580.00	307.70	10,430.50	539.80	254.50	53.25	15,136.00	1,324.99
Washington	Jackson	1,561.83	378.06	1,074.50	1,317.34	2,018.75	70.25	4,904.00	793.70	1,133.09	1,831.21	10,762.17	4,390.56
Cabin Creek	Kanawha	6,853.73	1,912.00	15,896.50	312.50	14,232.00	1,330.00	3.00	5.00	-	-	38,363.73	3,579.50
Big Sandy	Kanawha	1,037.53	636.00	752.88	873.25	1,454.13	595.39	237.06	2,252.58	107.34	968.44	3,588.94	5,325.65
Charleston	Kanawha	411.33	804.30	-	-	107.21	373.75	224.00	224.75	228.00	173.00	1,080.54	975.80
Elk	Kanawha	4,914.38	2,845.44	1,422.75	1,455.75	867.75	1,640.69	3,542.56	3,938.48	6,400.10	1,115.38	17,127.44	10,993.74
Jefferson	Kanawha	411.00	14.25	-	-	5,946.00	991.00	1,733.00	1,459.52	11.00	5.00	8,101.00	2,469.77
Loudon	Kanawha	8,050.25	1,770.75	1,383.25	692.14	-	-	-	-	-	-	9,283.50	2,270.89
Malden	Kanawha	6,006.21	1,615.87	1,439.00	2.00	-	-	-	-	-	-	8,337.31	1,617.87
Poca	Kanawha	367.00	15.88	369.75	95.62	-	-	-	-	-	-	536.75	111.50
Union	Kanawha	104.00	26.00	-	-	3,501.00	1,018.51	1,391.00	1,046.66	-	-	4,996.00	2,091.17
Washington	Kanawha	725.00	10.00	-	-	-	-	-	-	-	-	725.00	10.00
Carroll	Lincoln	-	-	159.50	3.00	-	-	-	-	-	-	159.50	3.00
Duval	Lincoln	-	-	80.00	4.00	-	-	3,433.13	406.06	100.00	250.00	3,613.13	660.06
Hearts Creek	Lincoln	-	-	80.00	1.00	-	-	781.00	472.05	1,104.50	22.50	1,965.50	495.55
Laurel Hill	Lincoln	157.00	151.00	-	-	-	-	-	-	-	-	157.00	151.00
Sheridan	Lincoln	496.50	88.50	95.00	2.00	-	-	-	-	-	-	591.50	88.50
Logan	Logan	-	-	9,891.40	13.00	X 304.00	612.00	4,977.00	228.73	64.00	20.00	14,576.40	873.73
Chapmansville	Logan	-	-	1,348.00	123.47	X 40.50	173.50	11,634.00	284.04	1,830.25	33.76	14,761.75	814.75
Triadelphia	Logan	-	-	3,773.00	15.00	-	-	-	-	-	-	3,773.00	15.00
Union	Mason	941.00	45.80	-	-	-	-	3,837.50	451.50	-	-	4,778.50	497.30
Raymond	Mason	153.00	2.00	-	-	-	-	-	-	-	-	153.00	2.00
Arbuckle	Mason	-	-	1.00	1.00	-	-	-	-	-	-	1.00	1.00
Barry	Mingo	-	-	90.00	1.00	1,697.00	-	1,252.12	31.00	-	-	3,037.12	32.00
Lee	Mingo	-	-	1,979.00	14.00	-	-	-	-	-	-	1,979.00	14.00
Warfield	Mingo	632.00	37.75	87.00	22.00	750.00	10.00	7,252.70	1,573.50	50.00	6.50	8,799.70	1,649.55
Marion	Mingo	-	-	93.00	2.00	7,703.84	21.00	8,892.00	25.81	-	-	16,678.84	48.81
Morgan	Monongalia	80.00	1,500.00	-	-	-	-	1,944.00	24.00	-	-	2,024.00	1,524.00
Jefferson	Nicholas	491.00	2.00	80.80	21.48	-	-	-	-	-	-	561.00	23.48
Boulter	Nicholas	186.00	50.00	71.00	3.00	-	-	-	-	-	-	257.00	53.00

(X Denotes red in copy.)

District	County	1910 Acres	1910 Amount	1911 Acres	1911 Amount	1912 Acres	1912 Amount	1913 Acres	1913 Amount	1914 Acres	1914 Amount	total Acres	total Amount
WEST VIRGINIA (Continued):													
Buffalo	Putnam	253.00	$ 1.00	-	$ -	-	$ -	-	$ -	-	$ -	253.00	$ 1.00
Curry	Putnam	.50	28.00	-	-	1,791.00	1,055.45	2,279.50	2,492.16	2,663.28	1,677.13	6,739.28	5,248.54
Poca	Putnam	1,180.50	88.25	-	-	-	-	129.00	79.77	-	-	1,309.50	168.02
Teays Valley	Putnam	1,114.78	125.00	1,283.91	22.00	-	-	-	-	-	-	2,398.66	147.00
Union	Putnam	1,834.85	105.13	-	-	-	-	-	-	-	-	1,834.85	105.13
Curtis	Roane	140.00	1,892.75	333.58	745.50	23.56	525.00	X149.45	951.00	16.00	549.84	662.59	4,574.09
Geary	Roane	4,833.41	2,462.34	1,863.01	972.30	1,338.40	1,498.25	174.70	286.19	606.52	841.29	8,815.04	6,020.37
Harper	Roane	475.65	736.25	-	-	113.00	101.00	299.53	205.65	48.25	39.25	936.43	1,072.15
Smithfield	Roane	1,093.95	986.83	341.25	613.50	307.75	5,786.33	69.82	547.00	166.96	746.81	1,979.81	8,679.26
Spencer	Roane	2,176.30	1,088.91	2,015.59	885.20	646.47	1,890.83	660.33	91.50	570.09	1,986.54	6,068.60	5,736.98
Walton	Roane	1,160.00	369.57	684.13	477.77	478.25	181.00	899.35	340.00	107.09	305.00	3,193.72	1,613.34
Butler	Wayne	957.00	116.75	828.00	10.00	-	-	-	-	-	-	1,785.00	126.75
Ceredo	Wayne	-	-	1,341.00	19.00	-	-	2,577.73	492.61	371.20	73.65	4,289.93	585.26
Union	Wayne	20.00	7.50	14,323.00	444.00	-	-	-	-	-	-	14,343.00	451.50
Lincoln	Wayne	373.00	4.00	26.00	2.00	1,317.00	153.56	5,122.75	1,133.12	1,074.00	186.50	7,812.75	1,479.12
Stonewall	Wayne	-	-	1,138.00	109.95	831.32	65.00	5,204.50	579.66	465.00	50.00	7,638.82	804.61
Spring	Wirt	45.00	1.00	-	-	-	-	-	-	-	-	45.00	1.00
Total West Virginia		97,384.31	$19,890.20	82,358.95	$10,340.77	53,434.20	$19,387.23	95,364.06	$23,172.17	18,491.12	$11,465.47	307,012.63	$84,235.84
TOTAL KENTUCKY		29,364.37	1,386.37	6,747.33	932.06	13,291.75	4,430.68	46,226.13	2,704.41	11,461.00	1,437.84	107,092.58	10,783.86
TOTAL OHIO		1,444.80	190.13	1,286.00	139.75	8,672.00	1,402.86	236.00	74.00	-	-	11,640.80	1,814.74
Grand Total		88,183.18	$21,377.20	90,392.28	$11,382.98	75,417.95	$25,210.77	141,830.18	$25,950.58	29,952.12	$13,903.31	425,745.71	$96,834.44

(X Denotes red in copy.)

1818

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

UNOPERATED LEASES ACQUIRED BY DISTRICTS

FROM 1915 TO 1920, INCLUSIVE

District	County	1915 Acres	1915 Amount	1916 Acres	1916 Amount	1917 Acres	1917 Amount	1918 Acres	1918 Amount
WEST VIRGINIA:									
Crook	Boone	-	$ -	-	$ -	-	$ -	-	$ -
Peytonia	Boone	-	-	-	-	-	-	-	-
Scott	Boone	-	-	-	-	-	-	466.00	64.75
Sherman	Boone	1,027.00	1,368.80	40.00	10.00	-	-	366.00	17.50
Washington	Boone	-	-	310.50	118.75	612.50	2.00	30.00	1.00
Grant	Cabell	110.00	104.15	1,509.00	694.89	6,910.06	3,117.60	38.00	11.25
Huntington	Cabell	-	-	-	-	462.00	106.00	-	-
Union	Cabell	-	-	3,173.00	238.00	3,681.00	153.10	357.50	51.40
Barboursville	Cabell	-	-	-	-	-	-	-	-
Center	Calhoun	-	-	-	-	-	-	-	-
Lee	Calhoun	-	-	-	-	-	-	-	-
Henry	Clay	2,363.50	719.50	455.00	244.00	300.00	64.00	189.00	56.50
Otter	Clay	-	-	-	-	2,857.25	1,238.31	-	-
Union	Clay	4,110.00	-	8.80	-	37.50	20.00	6.50	3.00
Buffalo	Clay	-	-	-	-	-	-	-	-
Falls	Fayette	-	-	-	-	700.36	2,500.00	2,800.00	-
Grant	Jackson	-	-	-	-	-	-	-	-
Ravenswood	Jackson	-	-	-	-	-	-	-	-
Ripley	Jackson	8,301.36	1,581.73	1,031.50	242.65	1,121.00	256.50	472.00	95.00
Washington	Jackson	2,127.24	700.55	5,831.30	1,206.57	657.12	1,881.50	79.06	171.15
Cabin Creek	Kanawha	19,774.28	61.00	1,388.92	24,022.43	1,933.21	61.00	17.00	152.00
Big Sandy	Kanawha	909.89	236.33	164.50	4,991.36	58.14	330.00	58.25	326.37
Charleston	Kanawha	110.00	55.00	-	-	145.50	65.50	70.00	36.50
Elk	Kanawha	4,709.00	1,784.18	5,968.19	5,080.83	385.11	106.50	2,849.00	635.00
Jefferson	Kanawha	1,331.50	348.25	2,621.00	2,749.50	347.00	225.25	-	-
Loudon	Kanawha	-	-	-	-	477.50	164.87	489.00	185.75
Malden	Kanawha	-	-	-	-	122.00	178.00	-	-
Poca	Kanawha	-	-	-	-	65.34	43.25	143.75	36.75
Union	Kanawha	627.00	173.50	3,867.00	1,548.52	-	-	-	-
Washington	Kanawha	-	-	-	-	-	-	-	-
Carrol	Lincoln	-	-	-	-	2,065.00	572.00	222.00	55.50
Duval	Lincoln	1,510.81	783.87	-	-	-	-	-	-
Hearts Creek	Lincoln	300.00	61.50	50.00	-	-	-	-	-
Laurel Hill	Lincoln	-	-	-	-	-	-	-	-
Sheridan	Lincoln	-	-	-	-	125.00	-	125.00	31.75
Grant	Jackson	1,700.00	1,191.00	118.46	154.50	-	-	-	-
Union	Jackson	-	-	-	-	-	-	-	-
Washington	Lincoln	-	-	-	-	328.00	82.00	-	-
Otter	Braxton	-	-	-	-	-	-	-	-
Logan	Logan	316.00	60.00	-	-	-	-	-	-
Chapmansville	Logan	842.50	122.40	-	-	260.00	3.00	8.00	-
Tridelphia	Logan	-	-	-	-	-	-	-	-
Union	Mason	1,980.50	411.76	2,300.50	28.00	-	-	-	-
Arbuckle	Mason	-	-	-	-	4,653.67	5,480.75	124.50	4.00
Harvey	Mingo	148.00	20.00	-	-	-	-	-	-
Lee	Mingo	-	-	-	-	-	-	-	-
Garfield	Mingo	30.00	17.50	6.00	100.00	70.00	11.00	-	-
Hardee	Mingo	17.80	-	46.00	160.00	30.00	7.50	-	-

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

UNOPERATED LEASES ACQUIRED BY DISTRICTS

FROM 1915 TO 1920, INCLUSIVE

	1916		1917		1918		1919		1920		Total	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
	-	$ -	-	$ -	-	$ -	8,721.00	$ -	-	$ -	8,721.00	$ -
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	466.00	64.75	-	-	-	-	466.00	64.75
	40.00	10.00	-	-	366.00	17.50	10,002.05	-	-	-	11,438.05	1,396.30
	310.50	118.75	612.50	2.00	30.00	1.00	-	-	-	-	953.00	121.75
	1,509.00	694.39	6,910.06	2,117.60	38.00	11.28	-	-	60.00	15.00	8,637.06	2,942.39
	-	-	462.00	106.00	-	-	-	-	1,803.87	192.00	2,265.87	298.00
	3,173.00	238.00	3,681.00	153.10	357.50	51.40	-	-	-	-	7,211.50	439.50
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	1,366.00	61.78	1,366.00	61.78
	-	-	-	-	-	-	-	-	-	-	-	-
	455.00	244.00	300.00	64.00	189.00	56.50	693.00	190.97	487.00	256.75	4,487.50	1,831.72
	-	-	2,857.25	1,238.31	-	-	50.00	50.00	65.75	134.75	2,973.00	1,413.06
	8.80	-	37.50	20.00	6.50	3.00	40.00	-	202.40	508.26	4,408.20	531.26
	-	-	-	-	-	-	210.00	52.50	-	-	210.00	52.50
	-	-	700.36	2,500.00	2,800.00	-	6,000.00	-	-	-	9,500.36	2,500.00
	-	-	-	-	-	-	-	-	-	186.00	-	186.00
	-	-	-	-	-	-	1,695.00	625.75	694.00	1,549.25	2,389.00	2,175.00
	1,031.50	242.65	1,121.00	256.50	472.00	95.00	2,601.57	380.05	993.00	158.70	14,520.42	2,714.63
	5,831.30	1,206.57	657.12	1,681.50	79.00	171.12	710.81	2,255.35	90.53	5,552.00	9,496.06	11,766.09
	1,388.92	24,022.43	1,933.21	61.00	17.00	152.00	-	-	4,942.52	486.50	28,255.90	24,982.93
	164.50	4,991.36	56.14	330.00	58.25	326.37	6.26	100.00	6.00	175.00	1,203.04	6,159.06
	-	-	145.50	55.50	70.00	36.00	288.25	72.05	-	1.00	613.75	219.55
	5,966.19	5,080.83	385.11	106.50	2,849.00	635.00	1.81	38.50	3,966.72	4,836.25	16,677.83	12,480.96
	2,621.00	2,749.50	347.00	225.25	-	-	87.00	7.75	-	-	4,386.50	3,330.75
	-	-	477.50	164.87	489.00	185.75	13,616.00	673.00	193.00	185.00	14,775.50	1,208.62
	-	-	122.00	178.00	-	-	-	-	-	-	122.00	178.00
	-	-	63.34	43.25	143.75	36.75	2,065.00	525.75	-	-	2,272.09	605.75
	3,867.00	1,548.52	-	-	-	-	7,533.25	543.80	270.00	105.00	11,997.25	2,370.62
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	2,065.00	672.00	222.00	55.50	-	-	-	-	2,287.00	727.50
	-	-	-	-	-	-	-	-	-	-	1,510.81	783.87
	50.00	-	-	-	-	-	-	-	-	-	380.00	61.50
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	125.00	-	125.00	31.75	272.00	68.50	-	-	822.00	100.25
	118.46	154.50	-	-	-	-	-	-	330.00	156.00	2,148.46	1,501.50
	-	-	-	-	-	-	96.00	24.00	3,182.00	376.50	3,278.00	400.50
	-	-	328.00	82.00	-	-	483.00	60.00	36.00	1.00	857.00	143.00
	-	-	-	-	-	-	-	-	11,862.42	28,579.91	11,862.42	28,579.91
	-	-	-	-	-	-	-	-	-	-	316.00	60.00
	-	-	280.00	3.00	8.00	-	-	-	-	-	1,110.50	125.40
	-	-	-	-	-	-	-	-	-	-	-	-
	2,300.50	28.00	-	-	-	-	-	-	-	-	4,291.00	439.76
	-	-	4,653.67	5,480.75	124.50	4.00	1,965.00	349.95	699.00	165.80	7,442.17	6,000.50
	-	-	-	-	-	-	-	-	-	-	148.00	20.00
	-	-	-	-	-	-	-	-	-	-	-	-
	6.00	100.00	70.00	11.00	-	-	1,023.00	-	-	-	1,129.00	128.50
	46.00	160.00	30.00	7.50	-	-	1,230.00	-	-	-	1,323.50	167.50

District	County	1916 Acres	1916 Amount	1916 Acres	1916 Amount	1917 Acres	1917 Amount	1918 Acres	1918 Amount	A
WEST VIRGINIA (Continued):										
Buffalo	Putnam	-	$ -	-	$ -	562.00	$ 137.15	-	$ -	$
Curry	Putnam	1,906.50	510.50	337.00	107.50	785.25	271.75	8.00	2.00	
Poca	Putnam	-	-	764.25	803.57	-	-	-	-	
Teays Valley	Putnam	-	-	-	-	8,676.00	3,667.70	166.00	27.75	2,
Union	Putnam	-	-	-	-	-	-	-	-	
Curtis	Roane	337.00	370.00	6,362.02	1,843.87	64.20	1,460.00	101.50	75.00	
Geary	Roane	772.88	766.24	597.96	5,776.42	160.50	469.25	65.50	690.00	
Harper	Roane	910.75	1,467.00	121.81	877.88	552.13	376.36	-	-	
Smithfield	Roane	341.74	121.06	134.56	287.50	362.94	3,377.39	2.66	3.07	
Spencer	Roane	761.38	828.06	2,015.50	976.82	186.79	1,834.45	14.63	25.00	
Walton	Roane	241.57	1,304.76	180.00	1,380.01	5.19	750.00	-	-	
Butler	Wayne	-	-	-	-	2.00	-	-	-	
Ceredo	Wayne	2,218.00	21.00	290.00	-	-	-	-	-	
Union	Wayne	-	-	-	-	-	-	748.17	166.37	
Lincoln	Wayne	305.00	8.00	617.00	56.50	-	-	-	-	
Stonewall	Wayne	-	2.00	984.00	253.50	-	-	-	-	
Spring	Wirt	-	-	-	-	-	-	-	-	
Scott	Putnam	-	-	-	-	329.50	82.37	-	-	
Marsh Fork	Raleigh	-	-	-	-	-	-	-	-	
Reedy	Roane	-	-	675.00	168.75	355.00	88.75	-	-	1
Total West Virginia		60,149.83	$15,196.63	38,668.77	$33,817.82	40,439.76	$27,894.78	9,717.02	$2,921.83	13
TOTAL KENTUCKY		18,955.50	1,943.13	23,761.85	826.94	25,264.25	634.04	1,092.00	53.00	1
TOTAL OHIO		-	-	-	-	-	-	-	-	
Grand Total		79,105.33	$17,139.76	62,430.62	$34,644.46	65,704.01	$28,528.82	10,809.02	$2,974.83	14

	1916		1917		1918		1919		1920		Total	
	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount	Acres	Amount
	-	$ -	562.00	$ 137.15	-	$ -	$ 167.00	$ 41.75	527.00	$ 131.75	1,256.00	$ 310.65
80	337.00	107.50	785.25	271.75	8.00	2.00	245.00	61.25	68.00	17.00	3,348.75	970.00
	764.25	803.57	-	-	-	-	2,600.00	202.00	-	-	3,372.25	1,005.57
	-	-	8,676.00	3,667.70	166.00	27.75	186.00	71.50	1,284.83	320.59	10,312.83	4,107.54
	-	-	-	-	-	-	23.00	5.75	201.00	92.00	224.00	97.75
00	8,362.03	1,843.87	64.20	1,460.00	101.50	76.00	76.00	50.00	127.00	173.00	4,067.72	3,971.87
24	607.96	5,776.42	160.50	469.25	65.50	690.00	76.11	497.73	659.76	2,293.35	2,332.71	10,492.99
00	121.81	677.88	352.13	376.36	-	-	867.00	268.50	34.91	30.00	2,486.60	2,719.74
00	134.56	287.50	362.94	3,377.39	2.66	3.07	3.35	46.60	3.72	530.36	848.97	4,365.97
00	2,015.50	976.82	186.79	1,534.45	14.63	25.00	69.58	76.00	185.48	346.93	3,233.33	3,782.24
00	180.00	1,380.01	3.19	750.00	-	-	32.00	43.81	72.50	1,219.96	529.26	4,698.54
	-	-	2.00	-	-	-	-	-	-	-	2.00	-
00	290.00	-	-	-	-	-	-	-	-	-	2,508.00	21.00
	-	-	-	-	748.17	166.37	-	-	-	-	748.17	166.37
00	617.00	56.50	-	-	-	-	-	-	-	-	922.00	64.50
00	984.00	253.50	-	-	-	-	-	-	-	-	984.00	253.50
	-	-	-	-	-	-	943.50	238.00	-	-	943.50	238.00
	-	-	329.50	82.37	-	-	-	-	2,008.00	502.00	2,337.50	584.37
	-	-	-	-	-	-	66,108.45	3,038.85	4,140.61	1,190.77	70,249.06	4,229.62
	675.00	168.75	355.00	88.75	-	-	1,021.00	255.25	-	-	2,051.00	512.75
83	38,668.77	$53,817.52	40,439.76	$27,894.78	9,717.02	$2,941.83	151,825.99	$10,914.91	39,652.73	$30,690.16	320,454.09	$161,435.83
13	23,761.85	826.94	25,264.25	634.04	1,092.00	55.00	16,857.00	1,474.81	6,006.50	408.00	91,937.10	5,339.92
	-	-	-	-	-	-	-	-	-	-	-	-
76	62,430.62	$54,644.46	65,704.01	$28,528.82	10,809.02	$2,974.83	168,682.99	$12,389.72	45,659.23	$31,098.16	412,391.19	$166,775.75

1820

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

UNOPERATED LEASES ACQUIRED BY DISTRICTS

FOR THE YEARS ENDED DECEMBER 31, 1921, 1922 AND 1923

District	County	1921 Acres	1921 Amount	1922 Acres	1922 Amount	1923 Acres	1923 Amount	Total Acres	Total Amount
WEST VIRGINIA:									
Creek	Boone	1.00	$ 1.00	-	$ -	7.00	$ 7.00	8.00	$ 8.00
Peytonia	Boone	1,780.00	-	-	-	-	-	1,780.00	-
Scott	Boone	-	-	3.00	3.00	-	-	3.00	3.00
Sherman	Boone	-	-	-	-	-	-	-	-
Washington	Boone	276.50	69.12	781.50	188.19	137.00	34.25	1,195.00	288.56
Grant	Cabell	4,850.78	1,137.19	16.00	1.00	428.50	189.75	4,995.28	1,327.94
Huntington	Cabell	174.00	87.00	-	-	-	-	174.00	87.00
Union	Cabell	2,374.80	593.68	-	-	-	-	2,374.80	593.68
Barboursville	Cabell	-	-	-	-	-	-	-	-
Center	Calhoun	1.87	84.17	-	-	-	-	1.87	84.17
Beary	Clay	-	-	2,813.78	56.50	987.00	428.00	3,470.78	486.50
Otter	Clay	-	-	1,086.50	13.50	887.50	548.12	1,974.00	561.62
Union	Clay	-	-	142.50	52.50	3.00	300.00	145.50	352.50
Falls	Fayette	-	-	4,000.00	1,000.00	-	-	4,000.00	1,000.00
Ravenswood	Jackson	380.00	128.50	100.00	28.00	-	-	480.00	147.50
Ripley	Jackson	853.00	138.25	1,636.00	264.50	994.00	268.86	3,183.00	666.61
Washington	Jackson	216.00	661.80	39.00	80.00	967.63	445.31	1,222.63	1,186.81
Cabin Creek	Kanawha	8.00	1,000.00	-	-	-	-	8.00	1,000.00
Big Sandy	Kanawha	12.00	2,500.00	88.68	28,078.00	222.50	2,642.29	323.18	30,818.29
Charleston	Kanawha	-	-	-	-	120.00	30.00	120.00	30.00
Elk	Kanawha	3.66	3.66	861.00	610.28	74.00	456.28	638.66	1,070.16
Loudon	Kanawha	-	-	131.68	84.81	-	1.00	131.68	85.81
Malden	Kanawha	122.50	118.75	-	-	-	-	122.50	118.75
Union	Kanawha	-	109.00	97.00	97.00	1,141.00	286.00	1,198.00	492.00
Carrol	Lincoln	-	-	14.28	-	286.00	-	300.28	-
Sheridan	Lincoln	-	-	48.00	1.00	100.00	1,429.00	128.00	1,430.00
Grant	Jackson	208.00	226.00	-	-	-	-	208.00	226.00
Union	Jackson	290.00	80.00	1,043.00	315.00	-	-	1,333.00	395.00
Washington	Lincoln	-	-	-	-	84.00	8.00	84.00	8.00
Otter	Braxton	-	-	17.28	-	218.78	-	235.00	-
Chapmansville	Logan	-	-	-	-	1,493.41	379.28	1,493.41	379.28
Sherrard	Mason	13,023.50	1,236.90	53.00	10.00	-	-	13,056.50	1,246.90
Barfield	Hugo	-	-	96.00	1.00	-	-	96.00	1.00
Hamilton	Nicholas	178.40	715.60	-	-	-	-	178.40	715.60
Buffalo	Putnam	4,076.83	958.18	-	-	-	-	4,076.83	958.18
Curry	Putnam	88.00	22.88	569.00	143.28	3,146.28	186.54	3,803.28	352.67
Poca	Putnam	-	-	79.50	19.87	1,708.28	426.56	1,788.75	446.43
Teays Valley	Putnam	1,636.86	336.41	803.00	200.50	-	-	2,439.86	536.91
Curtis	Roane	131.50	92.50	150.14	107.50	56.00	413.50	337.64	613.50
Beary	Roane	12.00	-	77.75	104.00	824.75	696.43	914.50	800.43
Harper	Roane	142.00	126.00	-	-	433.00	380.50	575.00	506.50
Smithfield	Roane	45.42	254.48	1.00	373.00	343.48	337.63	389.90	1,167.11
Spencer	Roane	1.81	5.00	100.00	50.00	321.00	77.00	422.81	132.00
Walton	Roane	34.06	562.98	-	-	-	-	34.06	562.98
Scott	Putnam	1,448.82	1,323.00	-	-	-	-	1,448.82	1,323.00
Marsh Fork	Raleigh	1,004.00	206.50	-	-	288.00	63.78	1,289.00	270.28
Total West Virginia		32,712.78	$12,734.20	14,138.44	$28,808.37	18,184.02	$10,230.99	65,035.24	$51,773.56
TOTAL KENTUCKY		3,401.00	285.28	14,543.00	2,325.12	14,549.00	280.50	32,493.00	2,858.87
TOTAL OHIO		-	-	-	-	-	-	-	-
Grand Total		36,113.78	$13,989.48	28,678.44	$31,131.49	29,733.02	$10,511.49	94,525.24	$54,632.43

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF

SUBSEQUENT RENEWALS IN THE CASE OF SPECIFIC LEASES

BIG SANDY DISTRICT, KANAWHA COUNTY

	Original Valuation		Renewals 1910-1921 Inclusive			Renewals 1922-1924 Inclusive		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
19389	225.00	$ 5,625.00	1913	225.00	$ 56.25	Apr. 1922	225.00	$ 225.00
19331	30.00	750.00	1913	30.00	37.50	Apr. 1922	30.00	150.00
19431	35.00	350.00	1913	35.00	35.00	May 1922	35.00	160.00
19606	18.00	750.00	Aug. 1913	15.00	93.50	Aug. 1922	15.00	691.66
19697	3.00	150.00	Mar. 1915	3.00	56.75	Sept. 1922	3.00	50.00
19606	6.25	300.00	June 1914	6.25	37.50	Oct. 1922	6.25	37.50
19614	3.00	150.00	June 1914	3.00	18.75	Oct. 1922	3.00	18.75
19620	141.00	1,410.00	1913	141.00	40.00	Oct. 1922	141.00	200.00
19643	326.00	3,275.00	Oct. 1913	326.00	25.00	Nov. 1922	326.00	1,050.00
19627	25.00	250.00	Aug. 1915	25.00	37.50	Jan. 1923	25.00	1.00
12379	32.50	1,625.00	June 1914	32.50	37.50	Feb. 1923	32.50	150.00
19740	43.00	2,225.00	-	-	-	Feb. 1923	43.00	300.00
19744	108.00	2,700.00	Feb. 1914	108.00	75.00	Feb. 1923	108.00	600.00
19748	11.50	57.50	Aug. 1915	11.50	25.00	Feb. 1923	11.50	200.00
12524	12.00	300.00	Aug. 1914	12.00	75.00	Feb. 1923	12.00	200.00
12318	32.50	1,625.00	Aug. 1914	32.50	37.50	Feb. 1923	32.50	175.00
12031-2	96.00	1,951.00	Apr. 1914	96.00	150.00	Feb. 1923	96.00	600.00
12285	51.00	2,550.00	May 1914	51.00	75.00	Feb. 1923	51.00	100.00
19762	83.00	4,150.00	Apr. 1914	83.00	37.50	Mar. 1923	83.00	500.00
19764	6.20	1,640.00	May 1914	6.20	37.50	Mar. 1923	6.20	1.00
19767	24.60	-	May 1914	24.60		Mar. 1923	24.60	300.00
12247	45.00	2,250.00	May 1914	45.00	75.00	Mar. 1923	45.00	300.00
12256	65.00	3,250.00	May 1914	65.00	75.00	Mar. 1923	65.00	300.00
12276	126.00	6,300.00	May 1914	126.00	75.00	Mar. 1923	126.00	300.00
11984	51.00	2,550.00	May 1914	51.00	75.00	Mar. 1923	51.00	300.00
12178	80.00	800.00	May 1914	80.00	75.00	Mar. 1923	80.00	300.00
12275	40.00	2,000.00	May 1914	40.00	75.00	Mar. 1923	40.00	300.00
12415	41.00	1,025.00	July 1914	41.00	75.00	Mar. 1923	41.00	300.00
11980	13.00	325.00	June 1914	13.00	62.50	Mar. 1923	13.00	150.00
11969	55.00	1,375.00	Mar. 1914	55.00	75.00	Mar. 1923	55.00	150.00
17765	25.00	625.00	1913	25.00	75.00	Mar. 1923	25.00	100.00
12515	58.00	2,900.00	Aug. 1914	58.00	75.00	Mar. 1923	58.00	200.00
11986	75.00	3,750.00	1913	75.00	200.00	Mar. 1923	75.00	400.00
12542	65.00	3,250.00	Sept. 1914	65.00	75.00	Mar. 1923	65.00	300.00
17775	220.00	1,375.00	Mar. 1914	220.00	75.00	Apr. 1923	220.00	400.00
19780	368.00	18,174.40	Mar. 1914	368.00	75.00	Apr. 1923	368.00	600.00
19782	188.00	9,400.00	1914	188.00	56.25	Apr. 1923	188.00	850.00
12277	26.00	1,300.00	May 1914	26.00	75.00	Apr. 1923	26.00	300.00
11861	100.00	1,000.00	Feb. 1914	100.00	75.00	Apr. 1923	100.00	300.00
12238	14.00	70.00	May 1914	14.00	62.50	Apr. 1923	14.00	150.00
19781	42.00	1,050.00	1914	42.00	75.00	Apr. 1923	42.00	350.00
19820	200.00	9,000.00	Feb. 1914	200.00	37.50	May 1923	200.00	650.00
19843	200.00	2,667.00	Mar. 1914	200.00	75.00	May 1923	200.00	250.00
19844		2,142.75	Mar. 1914		56.25	May 1923		300.00
19846	185.00	4,625.00	Mar. 1914	185.00	50.00	May 1923	185.00	350.00
11948	40.00	400.00	Mar. 1914	40.00	75.00	May 1923	40.00	325.00
12279	46.25	700.00	May 1914	46.25	75.00	May 1923	46.25	304.50

1922

	Original Valuation		Removals 1910-1921 Inclusive			Removals 1922-1924 Inclusive		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
12224	81.00	$ 810.00	May 1914	81.00	$ 75.00	May 1923	81.00	$ 275.00
12035	61.00	1,828.00	Mar. 1914	61.00	75.00	June 1923	61.00	400.00
19211	5.00	250.00	1914	5.00	11.90	June 1923	5.00	300.00
12390	100.00	800.00	Sept. 1914	100.00	75.00	June 1923	100.00	400.00
12309	42.50	2,125.00	July 1914	42.50	75.00	June 1923	42.50	400.00
12471	80.00	2,800.00	Aug. 1914	80.00	75.00	June 1923	80.00	400.00
12480	80.00	948.68	May 1914	80.00	75.00	June 1923	80.00	300.00
12286	120.00	1,398.00	May 1914	120.00	75.00	June 1923	120.00	300.00
12287	99.00	915.00	May 1914	99.00	80.00	June 1923	99.00	300.00
12436	30.00	1,500.00	July 1914	30.00	75.00	June 1923	30.00	200.00
12213	68.00	3,400.00	May 1914	68.00	75.00	July 1923	68.00	300.00
12214	93.00	4,650.00	May 1914	93.00	75.00	July 1923	93.00	300.00
12237	37.00	1,850.00	May 1914	37.00	75.00	July 1923	37.00	400.00
11927	50.00	2,500.00	May 1914	50.00	75.00	July 1923	50.00	300.00
11965	100.00	2,500.00	Mar. 1914	100.00	75.00	July 1923	100.00	300.00
12486	68.00	3,350.00	Aug. 1914	68.00	75.00	July 1923	68.00	300.00
12404	10.00	250.00	July 1914	10.00	23.79	July 1923	10.00	1.00
19964	10.00	100.00	Aug. 1914	10.00	80.00	July 1923	10.00	300.00
19973	.37	37.80	June 1914	.37	85.00	July 1923	.37	150.00
19911	5.00	250.00	1914	5.00	11.90	July 1923	5.00	1.00
12239	15.00	375.00	May 1914	15.00	62.50	Aug. 1923	15.00	300.00
12210	14.00	350.00	May 1914	14.00	37.50	Aug. 1923	14.00	300.00
12048	47.00	1,176.00	May 1914	47.00	75.00	Aug. 1923	47.00	300.00
12184	55.00	2,750.00	Apr. 1914	55.00	75.00	Aug. 1923	55.00	400.00
12306	50.00	2,500.00	June 1914	50.00	26.13	Aug. 1923	50.00	300.00
12501	15.00	750.00	Aug. 1914	15.00	75.00	Aug. 1923	15.00	300.00
12327	23.00	115.00	June 1914	23.00	50.00	Oct. 1923	23.00	350.00
12641	28.00	1,400.00	Oct. 1914	28.00	37.50	Oct. 1923	28.00	350.00
11983	11.30	247.50	Mar. 1914	11.30	70.00	Feb. 1924	11.30	75.00
13771	50.00	250.00	Dec. 1915	50.00	75.00	Mar. 1924	50.00	400.00
13772	225.00	8,625.00	Dec. 1915	225.00	106.25	Mar. 1924	225.00	400.00
20264	18.00	480.00	Sept. 1914	18.00	42.19	Apr. 1924	18.00	300.00
10988	34.25	862.50	June 1913	34.25	1.00	Apr. 1924	34.25	225.00
17888	20.00	1,000.00	July 1930	20.00	287.50	Apr. 1924	20.00	150.00
11479	30.00	750.00	Oct. 1913	30.00	30.00	May 1924	30.00	275.00
12907	90.25	4,550.00	Feb. 1915	90.25	75.00	May 1924	90.25	300.00
12686	46.00	2,250.00	Jan. 1915	46.00	75.00	July 1924	46.00	150.00
	5,460.67	$161,837.08		5,417.67	$5,335.79		5,460.67	$24,591.41
Price per Acre		$ 29.67			$ .98			$ 4.50

1923

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENEWALS IN THE CASE OF SPECIFIC LEASES - CURTIS DISTRICT, BOONE COUNTY

Lease No.	Original Valuation Acres	Original Valuation Amount	Renewals 1910 - 1921 Inclusive Date	Acres	Amount	Renewals 1922 - 1926 Inclusive Date	Acres	Amount
19276	318.00	$ 7,878.00	-	-	$ -	March 1922	318.00	$ 1.00
19297	64.00	330.00	-	-	-	March 1922	64.00	1.00
19298	80.00	800.00	-	-	-	March 1922	80.00	1.00
19370	80.00	3,000.00	1913	86.00	86.00	Sept. 1922	86.00	1.00
19371	95.00	2,328.00	1913	95.00	95.00	Sept. 1922	95.00	180.75
19431	1.80	700.00	1914	1.80	180.00	Sept. 1922	95.00	304.00
19427	8.00	486.00	1913	8.00	100.00	Nov. 1922	1.80	300.00
19428	8.00			8.00		Dec. 1922	8.00	1.00
19665	31.00	930.00	1913	33.00	33.00	Dec. 1922	8.00	1.00
19679	128.00	6,400.00	-	-	-	Dec. 1922	33.00	300.00
11916	48.00	2,424.00	Feb. 1914	48.00	1.00	Dec. 1922	128.00	1.00
11918	40.00	2,025.00	Feb. 1914	40.00	1.00	Jan. 1923	48.00	1.00
16388	30.00	750.00	May 1918	30.00	80.00	Jan. 1923	40.00	1.00
19713	77.00	3,850.00	1914	77.00	80.00	Jan. 1923	30.00	180.00
19728	10.00	100.00	-	-	-	Feb. 1923	77.00	100.00
16493	10.00	100.00	Aug. 1918	10.00	1.00	May 1923	10.00	180.00
						Sept. 1923	10.00	1.00
	1,008.00	$31,796.00		436.80	$ 867.00		1,008.00	$ 1,323.75
Price per Acre		X$ 31.54			X$ 1.29			X$ 1.31

(X Denotes red in copy.)

1824

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENEWALS

IN THE CASE OF SPECIFIC LEASES - GRANT DISTRICT, BOONE COUNTY

	Original Valuation		Renewals 1910-1921, Incl.			Renewals 1922-1934, Incl.		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
19697	27.00	$ 270.00	1919	27.00	$ 13.50	Jan. 1923	27.00	$ 168.00
11671	63.00	3,150.00	Dec. 1913	63.00	62.00	Jan. 1923	63.00	300.00
16678	36.00	3,600.00	Mar. 1919	36.00	1.00	Jan. 1923	36.00	200.00
19688	30.00	1,500.00	-	30.00	41.62	Jan. 1923	30.00	150.00
19702	10.00	800.00	-	-	-	Jan. 1923	10.00	300.00
11907	73.00	3,650.00	Feb. 1914	73.00	75.00	Feb. 1923	73.00	100.00
12316	12.00	600.00	June 1914	12.00	25.00	Feb. 1923	12.00	300.00
11976	68.00	3,400.00	Mar. 1914	68.00	75.00	Feb. 1923	68.00	200.00
11909	73.00	3,650.00	Feb. 1914	73.00	75.00	Feb. 1923	73.00	100.00
11978	53.00	2,650.00	Mar. 1914	53.00	75.00	Feb. 1923	53.00	300.00
16842	7.00	350.00	July 1915	7.00	35.75	Feb. 1923	7.00	666.00
16861	3.00	150.00	July 1915	3.00	15.00	Feb. 1923	3.00	666.00
16843	10.00	500.00	July 1915	10.00	35.00	Feb. 1923	10.00	666.00
19724	50.00	2,500.00	1913	50.00	25.00	Feb. 1923	50.00	262.50
19746	19.00	950.00	1913	19.00	67.50	Feb. 1923	19.00	500.00
12027	37.00	370.00	Mar. 1914	37.00	50.00	Mar. 1923	37.00	300.00
12443	28.00	700.00	July 1914	28.00	28.00	Mar. 1923	28.00	350.00
16614	300.00	7,500.00	May 1919	300.00	150.00	Mar. 1923	300.00	500.00
16860	150.00	3,750.00	May 1919	150.00	75.00	Mar. 1923	150.00	300.00
12551	58.00	2,750.00	Sept. 1914	55.00	1.00	Mar. 1923	55.00	300.00
19761	125.00	6,250.00	1913	125.00	37.50	Mar. 1923	125.00	300.00
16367	113.00	114.00	June 1918	113.00	1.00	Mar. 1923	113.00	278.50
11972	151.00	7,550.00	June 1914	151.00	71.50	Mar. 1923	151.00	300.00
11973	14.50	700.00	Mar. 1914	14.50	3.50	Mar. 1923	14.50	400.00
11862	100.00	5,000.00	Feb. 1914	100.00	75.00	Mar. 1923	100.00	300.00
12074	205.00	10,250.00	Mar. 1914	205.00	250.00	Mar. 1923	205.00	400.00
12044	72.00	3,600.00	Apr. 1914	72.00	75.00	Mar. 1923	72.00	600.00
11131	68.00	4,800.00	Aug. 1913	65.00	1.00	Apr. 1923	65.00	350.00
12422	78.00	3,412.50	June 1914	75.00	380.00	May 1923	78.00	206.25
12271	5.00	250.50	May 1914	5.00	37.50	May 1923	5.00	150.00
19673	24.50	1,225.00	Dec. 1914	24.50	18.75	May 1923	24.50	200.00
19686	6.50	325.00	Dec. 1914	6.50	18.75	May 1923	6.50	500.00
12543	37.50	1,875.00	Sept. 1914	37.50	36.50	May 1923	37.50	100.00
17281	7.75	11.81	Nov. 1919	7.75	37.50	May 1923	7.75	100.00
16909	14.00	111.36	July 1913	14.00	1.00	May 1923	14.00	200.00
12214	33.33	1,680.00	May 1914	32.33	62.50	May 1923	33.33	250.00
19645	22.50	1,125.00	Dec. 1919	22.50	150.00	May 1923	22.50	250.00
19656	15.50	395.25	Nov. 1919	15.50	37.50	June 1923	15.50	100.00
19987	125.00	6,250.00	Aug. 1914	125.00	93.75	Aug. 1923	125.00	300.00
13044	57.00	570.00	Mar. 1915	57.00	14.25	Nov. 1923	57.00	303.75
11341	98.00	980.00	Sept. 1913	98.00	98.00	Nov. 1923	98.00	300.00
11988	25.00	1,300.00	Nov. 1913	26.00	26.00	Jan. 1924	26.00	300.00
20173	10.50	525.00	Mar. 1915	10.50	41.75	Jan. 1924	10.50	300.00
20174	9.00	90.00	Mar. 1915	9.00	2.25	Jan. 1924	9.00	262.75
20175	4.00	40.00	Mar. 1915	4.00	1.00	Jan. 1924	4.00	244.00
17304	9.50	393.75	Mar. 1920	9.50	75.00	Jan. 1924	9.50	300.00
11396	35.00	1,750.00	Nov. 1913	35.00	35.00	Jan. 1924	35.00	300.00
13806	17.60	880.28	Nov. 1915	17.60	58.89	Feb. 1924	17.60	300.00
13467	20.00	1,000.00	Aug. 1918	20.00	75.00	Mar. 1924	20.00	300.00

	Original Valuation		Renewals 1910-1921, Incl.			Renewals 1922-1924, Incl.		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
12870	12.50	$ 625.00	Jan. 1915	12.50	$ 37.50	Mar. 1924	12.50	$ 150.00
17698	4.00	40.00	-	-	-	Mar. 1924	4.00	300.00
20250	14.87	931.21	July 1915	14.87	37.50	Apr. 1924	14.87	300.00
13843	12.50	625.00	Jan. 1915	12.50	37.50	June 1924	12.50	150.00
13295	4.00	40.00	Mar. 1915	4.00	4.00	June 1924	4.00	200.00
19233	50.00	2,500.00	Sept. 1912	50.00	62.50	Jan. 1922	50.00	200.00
10637	4.00	200.00	Mar. 1913	4.00	50.00	Mar. 1922	4.00	105.00
19317	122.00	6,100.00	1913	122.00	62.50	Apr. 1922	122.00	100.00
11414	100.00	2,500.00	Oct. 1913	100.00	25.00	Apr. 1922	100.00	100.00
19372	34.00	3,401.18	1913	34.00	13.73	May 1923	34.00	50.00
11130	100.00	5,000.00	Aug. 1913	100.00	50.00	July 1922	100.00	150.00
19823	69.50	3,475.00	Oct. 1914	69.50	125.38	Aug. 1922	69.50	175.00
19596	291.50	14,575.00	June 1913	291.50	49.34	Sept. 1922	291.50	300.00
19694	40.00	1,000.00	-	-	-	Nov. 1923	40.00	300.00
11956	60.00	3,000.00	Mar. 1914	60.00	75.00	Nov. 1922	60.00	100.00
	3,541.75	$148,176.67		3,467.75	$3,457.61		3,541.75	$17,507.75
Price per Acre	× $	41.84		× $	.99		×	4.94

1826

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENEWALS

IN THE CASE OF SPECIFIC LEASES - SALTHFIELD DISTRICT, BOONE COUNTY

Lease No.	Original Valuation		Renewals 1910-1921, Incl.			Renewals 1922-1934, Incl.		
	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
16361	3.00	$ 150.00	-	-	$ -	Nov. 1922	3.00	$ 200.00
16362	20.00	1,000.00	-	-	-	Nov. 1922	20.00	200.00
16363	16.50	825.00	-	-	-	Nov. 1922	16.50	200.00
12296	15.00	750.00	Apr. 1914	18.00	37.50	Dec. 1922	15.00	1.00
12295	5.03	262.50	Apr. 1914	5.03	18.75	Dec. 1922	5.03	1.00
12291	12.50	625.00	Apr. 1914	12.50	37.50	Dec. 1922	12.50	1.00
12352	6.00	312.50	Apr. 1914	6.00	9.38	Dec. 1922	6.00	1.00
19671	97.00	4,850.00	June 1914	97.00	75.00	Jan. 1923	97.00	150.00
19701	12.50	625.00	Mar. 1914	12.50	31.20	Jan. 1923	12.50	30.00
19692	66.00	3,300.00	May 1914	66.00	75.00	Jan. 1923	66.00	3.00
19693	26.50	1,286.72	June 1914	26.50	18.75	Jan. 1923	26.50	2.00
12682	2.50	125.00	Oct. 1914	2.50	1.00	Jan. 1923	2.50	1.00
19700	30.00	1,500.00	Mar. 1914	30.00	56.50	Jan. 1923	30.00	100.00
19726	73.00	3,650.00	Mar. 1914	73.00	44.25	Feb. 1923	73.00	65.00
19735	64.00	3,200.00	June 1919	64.00	250.00	Feb. 1923	64.00	250.00
19734	26.50	1,325.00	Apr. 1914	26.50	37.50	Feb. 1923	26.50	150.00
12240	76.00	4,084.27	May 1914	76.00	43.75	Feb. 1923	76.00	75.00
19710	10.00)	1,000.00	May 1914	10.00)	37.50	Feb. 1923	10.00	25.00
19730	10.00)			10.00)		Feb. 1923	10.00	30.00
12360	19.00	1,020.68	May 1914	19.00	9.38	Feb. 1923	19.00	18.75
19728	2.50	125.00	May 1914	2.50	9.38	Feb. 1923	2.50	25.00
19727	62.22	3,111.12	June 1914	62.22	46.83	Feb. 1923	62.22	413.89
19729	26.50	1,286.73	May 1914	26.50	18.75	Feb. 1923	26.50	25.00
19919	106.00	63.38	May 1914	106.00	6.25	Feb. 1923	106.00	12.50
19947	1.25	300.00	July 1914	1.25	1.00	Feb. 1923	1.25	25.00
19748	28.50	1,531.02	May 1914	28.50	14.06	Feb. 1923	28.50	30.00
19769	10.00)	300.00	May 1914	10.00)	1.00	Mar. 1923	10.00	150.00
19778	1.25)			1.25)		Mar. 1923	1.25	37.50
13467	57.00	1,425.00	July 1914	57.00	57.00	Mar. 1923	57.00	57.00
19800	81.50	4,580.50	Apr. 1914	81.50	75.00	Apr. 1923	81.50	300.00
19801	68.00	3,400.00	Mar. 1914	68.00	1.00	Apr. 1923	68.00	300.00
11167	10.00	500.00	Aug. 1913	10.00	1.00	Apr. 1923	10.00	75.00
11168	1.50	75.00	Aug. 1913	1.50	1.00	Apr. 1923	1.50	75.00
12196	5.02	262.50	May 1914	5.02	25.00	Apr. 1923	5.02	75.00
16397	127.00	3,175.00	-	-	-	Apr. 1923	127.00	100.00
19772	37.33	2,486.89	May 1914	37.33	37.22	May 1923	37.33	111.12
19667	83.00	4,150.00	May 1914	83.00	75.00	May 1923	83.00	1,000.00
12283	280.00	14,500.00	May 1914	280.00	150.00	May 1923	280.00	900.00
19868	68.00	3,400.00	May 1914	68.00	75.00	May 1923	68.00	400.00
19864	229.00	11,450.00	May 1914	229.00	125.00	May 1923	229.00	700.00
12287	2.50	125.00	May 1914	2.50	9.38	May 1923	2.50	37.50
19828	10.00	500.00	May 1914	10.00	37.50	May 1923	10.00	150.00
19826	53.00	2,650.00	Apr. 1914	53.00	75.00	May 1923	53.00	300.00
19825	153.00	7,650.00	Mar. 1914	153.00	84.75	May 1923	153.00	979.25
19827	7.50	375.00	June 1914	7.50	37.50	May 1923	7.50	75.00
19829	33.50)	3,350.00	June 1914	33.50)	150.00	May 1923	33.50	150.00
19830	33.50)			33.50)		May 1923	33.50	150.00
12283	2.50	125.00	May 1914	2.50	9.38	May 1923	2.50	100.00
19899	50.00	937.50	June 1914	50.00	100.00	May 1923	50.00	300.00

	Original Valuation		Renewals 1910-1921, Incl.			Renewals 1922-1924, Incl.		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
10500	365.00	$ 18,250.00	Mar. 1913	365.00	$ 1.00	May 1923	365.00	$ 750.00
12182	20.00	1,000.00	Apr. 1914	20.00	37.50	May 1923	20.00	100.00
12333	80.00	2,500.00	Apr. 1914	80.00	62.50	May 1923	80.00	250.00
12072	13.50	675.00	Mar. 1914	13.50	31.25	May 1923	13.50	200.00
19922	261.00	13,050.00	May 1914	261.00	150.00	June 1923	261.00	1.00
19899	50.00	937.50	June 1914	50.00	100.00	June 1923	50.00	38.00
19915	158.00	7,900.00	Apr. 1914	158.00	150.00	June 1923	158.00	1.00
19963	18.50	672.50	May 1914	15.50	67.50	July 1923	15.50	28.00
19945	7.50	375.00	Mar. 1914	7.50	22.00	Aug. 1923	7.50	100.00
20063	182.00	4,550.00	June 1914	182.00	300.00	Oct. 1923	182.00	109.00
20216	173.00	8,650.00	Aug. 1915	173.00	75.00	Feb. 1924	173.00	75.00
	3,827.60	$160,684.30		3,361.10	$2,954.41		3,827.60	$10,273.63
Price per Acre	X$	42.00		X$	.88		X$	2.91

(X Denotes red in copy.)

1928

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENEWALS

IN THE CASE OF SPECIFIC LEASES - SPENCER DISTRICT, ROANE COUNTY

	Original Valuation		Renewals 1910 - 1921 Inclusive			Renewals 1922 - 1934 Inclusive		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
16492	31.00	$ 310.00	Nov. 1917	31.00	$ 8.75	Sept. 1923	31.00	$ 1.00
18924	4.00	100.00	Aug. 1917	4.00	1.00	Sept. 1923	4.00	1.00
20103	63.00	1,575.00	Feb. 1915	63.00	75.00	Nov. 1923	63.00	1.00
17611	93.75	5,000.00	Apr. 1911	93.75	100.00	Mar. 1926	93.75	1.00
16945	2.00	1.84	Apr -	-	-	Mar. 1934	2.00	1.00
20279	4.00	3.66	-	-	-	Mar. 1934	4.00	100.00
20728	6.00	6.00	Ap -	-	-	Mar. 1934	6.00	100.00
	203.75	$6,996.50		191.75	$176.75		203.75	$205.00
Price per Acre		X$ 34.34			X$ .93			X$ 1.01

1829

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

COMPARISON OF ORIGINAL VALUATION AND COST OF SUBSEQUENT RENTALS

IN THE CASE OF SPECIFIC LEASES - WALTON DISTRICT, ROANE COUNTY

	Original Valuation		Renewals 1922 - 1924 Inclusive			Renewals 1922 - 1924 Inclusive		
Lease No.	Acres	Amount	Date	Acres	Amount	Date	Acres	Amount
19508	40.00	$ 4,000.00	Aug. 1913	40.00	$ 54.68	Aug. 1922	40.00	$ 666.67
19644	176.00	6,300.00	Apr. 1914	176.00	1.00	Nov. 1922	176.00	150.00
12090	57.00	2,850.00	Apr. 1914	57.00	1.00	Jan. 1923	57.00	100.00
12144	40.00	4,000.00	Apr. 1914	40.00	50.00	Jan. 1923	40.00	200.00
12148	40.00	400.00	Apr. 1914	40.00	1.00	Jan. 1923	40.00	1.00
19736	380.00	19,000.00	May 1914	380.00	1.00	Feb. 1923	380.00	1,000.00
19715	76.00	3,800.00	Apr. 1914	76.00	1.00	Feb. 1923	76.00	100.00
12202	19.75	987.50	Apr. 1914	19.75	70.00	Feb. 1923	19.75	300.00
12149	6.75	656.06	Apr. 1914	6.75	1.00	Mar. 1923	6.75	300.00
12369	50.00	2,500.00	June 1914	50.00	75.00	Mar. 1923	50.00	300.00
19776	50.00	2,500.00	Apr. 1914	50.00	62.50	Apr. 1923	50.06	307.62
12228	80.00	4,400.00	May 1914	80.00	53.00	June 1923	86.00	330.00
17200	100.00	5,450.00	May 1914	100.00	100.00	June 1923	100.00	660.66
19914	27.75	1,387.50	Aug. 1913	27.75	50.00	June 1923	27.75	115.06
13311	7.08	350.00	-	-	-	Feb. 1924	7.08	100.00
13670	3.50	350.00	Nov. 1918	3.50	75.00	Feb. 1924	3.50	150.00
76848	66.00	4,300.00	Dec. 1918	32.25	37.50	Mar. 1924	32.75	125.00
18619				32.25		Mar. 1924	32.25	240.00
13976	5.00	250.00	Dec. 1918	5.00	75.00	Mar. 1924	5.00	300.00
16708	10.00	500.00	-	-	-	Apr. 1924	10.00	300.00
	1271.83	$63,975.00		1183.75	$863.68		1886.33	$5,905.49
Price per Acre		X$ 50.36			X$ .76			X$ 4.92

(X Denotes red in copy.)

1530

JIRGAL EXHIBIT NO. 4

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING DEMAND INFORMATION FOR YEAR 1923

UNITED FUEL GAS COMPANY, INC.

STATEMENT OF MAXIMUM INDIVIDUAL DEMANDS

BY COMMUNITIES AND WHOLESALE CONSUMERS

FOR THE YEAR ENDED DECEMBER 31, 1932

Particulars	Maximum Individual Daily Demands in M. Cubic Feet					Average Daily Demand for Five Highest Days	Adjustments and Transfers	Average Daily Demand As Adjusted	Per Cent of Total
	First Highest	Second Highest	Third Highest	Fourth Highest	Fifth Highest				
RETAIL SERVICE:									
Charleston, West Virginia Division-									
City of Charleston	(J) 28,397	(J) 27,636	(J) 27,386	(F) 27,098	(J) 26,967	27,497	-	27,497	11.57
All Others							7,215	7,215	3.16
Total Charleston Division	28,397	27,636	27,386	27,098	26,967	27,497	7,215	34,712	14.73
Huntington, West Virginia Division-									
City of Huntington	(F) 14,125	(F) 13,968	(F) 13,772	(F) 13,604	(F) 13,196	13,733	922	13,654	5.82
City of Williamson	(F) 1,897	(F) 1,817	(F) 1,815	(F) 1,765	(J) 1,754	1,809	-	1,809	.76
All Others							6,447	6,447	2.73
Total Huntington Division	16,022	15,785	15,587	14,369	13,944	15,542	6,659	21,910	9.12
Spencer, West Virginia Division							1,911	1,911	.80
Ashland, Kentucky Division	(J) 8,180	(F) 7,872	(F) 7,710	(F) 7,208	(F) 7,165	7,487	9,662	17,149	7.20
Ironton, Ohio Division	(J) 5,064	(F) 4,833	(F) 3,869	(F) 3,736	(F) 3,673	4,251	4,181	8,432	3.54
Industrial Consumers Measured Separately	(F) 13,763	(F) 13,367	(J) 13,102	(J) 12,154	(J) 11,958	12,869	* 12,869	-	-
Unmeasured Demand (Estimated)	18,900	18,216	17,941	17,283	17,060	17,880	* 17,880	-	-
Total Retail Service	90,326	87,609	84,577	81,853	80,772	85,042	49,274	84,163	35.39
WHOLESALE SERVICE:									
Columbia Gas and Electric Company	(F) 47,774	(F) 46,798	(F) 46,382	(F) 46,029	(J) 45,847	46,566	-	46,566	19.56
Ohio Fuel Supply Company	(F) 37,725	(F) 37,286	(D) 37,266	(F) 36,937	(F) 36,933	37,229	-	37,229	15.66
Central Kentucky Natural Gas Company	(J) 7,373	(J) 7,221	(J) 7,201	(J) 6,950	(J) 6,927	7,134	-	7,134	3.00
Louisville Gas and Electric Company	(F) 7,481	(J) 6,884	(J) 6,840	(J) 6,027	(F) 5,923	6,431	-	6,431	2.70
Portsmouth Gas Company	(F) 8,939	(F) 8,486	(F) 8,417	(F) 7,783	(F) 7,783	8,282	-	8,282	3.48
Hope Natural Gas Company	(J) 24,396	(J) 22,480	(F) 22,244	(J) 20,450	(F) 20,398	21,994	-	21,994	9.25
Pittsburg and West Virginia Gas Company	(J) 27,074	(J) 26,817	(J) 26,225	(J) 23,346	(J) 22,430	25,178	-	25,178	10.59
All Others							879	879	.37
Total Wholesale Service	160,762	156,722	153,775	147,582	145,951	152,746	879	153,625	64.61
Grand Total	251,088	243,331	238,352	229,345	226,724	237,788	-	237,788	100.00

SUMMARY

Particulars	Average Demand As Adjusted	Per Cent of Total
City of Charleston	27,497	11.57
City of Huntington	13,854	5.83
City of Williamson	1,809	.76
Other West Virginia	15,443	6.49
Total West Virginia	58,603	24.65
Kentucky and Ohio	25,560	10.74
Wholesale Service	153,625	64.61
T o t a l	237,788	100.00

NOTE:
(J) Highest Demand in January
(F) Highest Demand in February
(D) Highest Demand in December
* Not Measured- Included under Unmeasured Demand (Estimated)

(I Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC.

DISTRIBUTION OF DEMAND MILEAGE

FOR THE YEAR ENDED DECEMBER 31, 1933

(Based on Individual Maximum Demands)

Particulars	Average Five Highest Individual Daily Demands	Per Cent	Distance of Transmission in Miles for Peak Load	Demand Times Distance in M. Cubic Feet	Per Cent
RETAIL SERVICE:					
Charleston, West Virginia Division-					
City of Charleston	27,497	11.57	27	742,419	6.13
Other Sales, Charleston Division	7,515	3.16	27	202,908	1.67
Total Charleston Division	35,012	14.73	-	945,326	7.80
Huntington, West Virginia Division-					
City of Huntington	13,854	5.83	65	900,510	7.43
City of Williamson	1,809	.76	69	124,821	1.03
Other Sales, Huntington Division	6,017	2.53	65	391,105	3.23
Total Huntington Division	21,680	9.12	-	1,416,436	11.69
Spencer, West Virginia Division	1,911	.80	4	7,644	.06
Ashland, Kentucky Division	17,176	7.23	80	1,370,320	11.31
Ironton, Ohio Division	8,411	3.54	85	714,935	5.90
Total Retail Service	84,143	35.36	-	4,454,659	36.78
WHOLESALE SERVICE:					
Columbia Gas and Electric Company	46,506	19.56	48	2,232,288	18.43
Ohio Fuel Supply Company	37,237	15.66	36	1,340,532	11.06
Central Kentucky Natural Gas Company	7,139	3.00	58	414,062	3.42
Louisville Gas and Electric Company	6,411	2.70	58	371,838	3.07
Portsmouth Gas Company	6,288	3.48	113	935,864	7.73
Hope Natural Gas Company	21,994	9.25	80	1,099,700	9.08
Pittsburg and West Virginia Gas Company	25,178	10.58	80	1,258,900	10.39
All Others	879	.37	10	8,796	.07
Total Wholesale Service	153,678	64.61	-	7,661,918	63.24
Grand Total	237,768	100.00	-	12,116,577	100.00
SUMMARY:					
City of Charleston	27,497	11.57	-	742,419	6.13
City of Huntington	13,854	5.83	-	900,510	7.43
City of Williamson	1,809	.76	-	124,821	1.03
Other West Virginia	15,443	6.49	-	601,604	4.96
Total West Virginia	58,603	24.65	-	2,369,404	19.55
Kentucky and Ohio	25,340	10.74	-	2,085,255	17.21
Wholesale Service	153,678	64.61	-	7,661,918	63.24
T o t a l	237,768	100.00	-	12,116,577	100.00

UNITED FUEL GAS COMPANY, INC.

DISTRIBUTION OF MAXIMUM DAILY DEMAND ON SYSTEM

CLASSIFIED BETWEEN RETAIL DIVISIONS AND WHOLESALE CONSUMERS

FOR THE YEAR 1923

Particulars	Maximum Daily Demand on System in M. Cubic Feet					Average Daily Demand for Five Days	Adjustments and Transfers	Average Daily Demand as Adjusted	Per Cent of Total
	Feb.13 1923	Feb. 4 1923	Jan.17 1923	Feb.18 1923	Feb. 5 1923				
RETAIL DIVISIONS:									
Charleston, West Virginia Division-									
City of Charleston	27,098	24,659	28,397	24,741	24,281	25,835	-	25,835	12.72
All Others	*	*	*	*	*	*	6,568	6,568	3.24
Total Charleston Division	27,098	24,659	28,397	24,741	24,281	25,835	6,568	32,403	15.96
Huntington, West Virginia Division-									
City of Huntington	14,125	12,190	11,320	13,968	11,681	12,657	X 207	12,450	6.13
City of Williamson	1,738	1,101	1,754	1,707	1,815	1,622	-	1,622	.80
All Others	*	*	*	*	*	*	4,721	4,721	2.32
Total Huntington Division	15,860	13,291	13,074	15,675	13,496	14,279	4,514	18,793	9.25
Spencer, West Virginia Division	*	*	*	*	*	*	1,670	1,670	.82
Ashland, Kentucky Division	7,165	6,325	7,016	7,210	6,961	6,936	6,148	13,084	6.44
Ironton, Ohio Division	3,849	3,178	2,670	4,933	3,602	3,645	3,270	6,915	3.41
Industrial Consumers Measured Seperately	7,583	8,003	8,113	3,995	8,779	7,295	X 7,295	-	-
Unmeasured Demand (Estimated)	17,244	14,318	13,704	18,016	14,938	15,643	X15,643	-	-
Total Retail Service	78,799	69,764	72,976	74,570	72,054	73,633	X 768	72,865	35.88
WHOLESALE CONSUMERS:									
Columbus Gas and Electric Company	46,049	43,734	45,347	47,774	43,554	45,328	-	45,328	22.32
Ohio Fuel Supply Company	37,725	33,445	33,242	36,937	33,963	35,062	-	35,062	17.26
Central Kentucky Natural Gas Company	5,005	3,849	5,545	4,402	4,295	4,615	-	4,615	2.27
Louisville Gas and Electric Company	4,986	7,481	4,366	3,354	4,801	4,598	-	4,598	2.26
Portsmouth Gas Company	7,891	6,813	6,816	8,939	7,088	7,403	-	7,403	3.65
Hope Natural Gas Company	15,815	19,464	4,901	15,337	16,304	13,904	-	13,904	6.85
Pittsburg and West Virginia Gas Company	15,758	19,694	28,223	13,784	17,278	18,542	-	18,542	9.13
All Others	*	*	*	*	*	*	768	768	.38
Total Wholesale Service	130,710	134,488	128,344	128,498	127,283	129,452	768	130,220	64.12
Grand Total	209,509	204,252	199,320	203,068	199,307	203,085	-	203,085	100.00

SUMMARY

Particulars	Average Demand as Adjusted	Per Cent of Total
City of Charleston	25,835	12.72
City of Huntington	12,450	6.13
City of Williamson	1,622	.80
Other West Virginia	12,959	6.38
Total West Virginia	52,866	26.03
Kentucky and Ohio	19,999	9.85
Wholesale Service	130,220	64.12
T o t a l	203,085	100.00

(X Denotes red in copy.)

* Not Measured - Included under Unmeasured Demand (Estimated).

UNITED FUEL GAS COMPANY, INC.

DISTRIBUTION OF DEMAND MILEAGE

FOR THE YEAR ENDED DECEMBER 31, 1945

(Based on maximum system demand)

Particulars	Distribution of Demand at Time of System Maximum	Per Cent	Distance of Transmission in Miles for Peak Load	Demand Times Distance in M. Cubic Feet	Per Cent
RETAIL SERVICE:					
Charleston, West Virginia Division-					
City of Charleston	20,836	10.24	27	667,540	6.68
Other Sales Charleston Division	8,568	5.24	27	177,336	1.74
Total Charleston Division	32,403	15.96	-	874,881	8.58
Huntington, West Virginia Division-					
City of Huntington	12,650	6.13	62	809,250	7.98
City of Williamson	1,622	.80	69	111,918	1.10
Other Sales, Huntington Division	4,721	2.34	65	306,865	3.01
Total Huntington Division	18,793	9.25	-	1,228,033	12.06
Spencer, West Virginia Division-	1,670	.82	4	6,680	.07
Ashland, Kentucky Division	13,084	6.44	80	1,048,720	10.28
Ironton, Ohio Division	6,918	3.41	82	567,775	5.57
Total Retail Service	73,868	36.88	-	3,744,089	36.77
WHOLESALE SERVICE:					
Columbia Gas and Electric Company	46,328	22.82	48	2,178,744	21.37
Ohio Fuel Supply Company	32,062	17.46	36	1,154,232	11.40
Central Kentucky Natural Gas Company	4,818	2.37	58	267,870	2.63
Louisville Gas and Electric Company	4,548	2.24	58	466,684	4.64
Portsmouth Gas Company	7,403	3.65	113	836,339	8.21
Hope Natural Gas Company	10,904	5.32	80	872,320	8.56
Pittsburgh and West Virginia Gas Company	18,542	9.13	80	947,100	9.30
All Others	768	.38	10	7,040	.07
Total Wholesale Service	130,220	64.12	-	6,438,849	63.23
Grand Total	203,088	100.00	-	10,182,938	100.00
DEMAND:					
City of Charleston	22,836	11.24	-	597,540	5.87
City of Huntington	12,650	6.23	-	809,250	7.95
City of Williamson	1,622	.80	-	111,918	1.10
Other West Virginia	44,989	8.38	-	450,865	4.34
Total West Virginia	84,866	36.03	-	3,109,594	20.74
Kentucky and Ohio	15,959	7.85	-	1,034,490	10.00
Wholesale Service	130,220	64.12	-	6,438,849	63.23
Total	203,088	100.00	-	10,182,938	100.00

UNITED FUEL GAS COMPANY, INC.

STATEMENT OF DAILY DEMAND

BY THE PRINCIPAL WHOLESALE CONSUMERS AND RETAIL DISTRICTS

MONTH OF JANUARY 1938

Day of Month	Wholesale Consumers							Retail Districts						Total Send-Out by Days
	Columbia Gas and Electric Company	Ohio Fuel Supply Company	Hope Natural Gas Company	Pittsburgh and West Virginia Gas Company	Central Kentucky Natural Gas Company	Louisville Gas and Electric Company	Portsmouth Gas Company	Ironton and Coal Grove	Ashland and Catlettsburg	Huntington and Kenova	Williamson	Charleston	Industrials Measured Separately	
1	30,728	29,104	14,487	15,334	5,587	3,794	5,459	2,393	5,143	10,311	1,347	21,303	6,732	151,619
2	33,996	33,985	14,458	14,810	6,582	3,614	5,459	2,679	5,249	10,001	1,327	23,646	7,251	161,727
3	33,095	28,288	14,510	14,686	6,360	3,683	5,618	2,834	4,987	10,038	1,321	22,344	7,573	157,021
4	40,184	34,327*	15,113	14,216	6,714	4,442	5,694	2,643	5,347	10,734	1,380	24,003	7,648	172,438
5	33,513	34,100	14,919	13,009	6,740	4,031	5,148	2,256	4,691	9,394	1,287	22,487	7,811	159,254
6	36,418	31,818	15,068	13,508	7,201	3,740	5,668	2,382	4,241	9,624	1,278	21,462	7,106	159,212
7	31,448	33,250	13,060	13,731	6,618	3,983	4,676	2,137	5,009	8,984	1,260	19,691	6,034	149,878
8	35,060	29,378	15,913	12,949	5,786	3,978	5,459	2,640	4,932	9,980	1,318	22,493	7,681	157,493
9	37,034	29,880	14,787	14,082	6,802	4,263	5,787	2,773	4,404	10,391	1,416	22,621	9,549	163,239
10	38,856	33,118	14,148	14,368	6,960	5,338	6,229	3,058	5,440	11,372*	1,498	25,715	8,914	174,014
11	37,236	29,280	13,830	15,026	7,373*	5,246	5,459	2,899	5,126	10,455	1,412	24,407	8,771	166,222
12	37,979	30,885	14,644	14,367	6,396	5,787	5,767	2,748	4,442	10,293	1,310	23,229	9,971	167,758
13	40,426	29,418	12,993	15,643	6,159	6,584*	6,061	2,824	5,390	10,942	1,431	25,195	6,803	171,369
14	30,274	29,280	13,284	16,608	5,841	2,747	4,909	1,972	4,294	8,838	1,015	19,043	9,171	147,263
15	35,830	29,284	12,966	15,234	5,440	6,040	5,767	2,786	4,808	10,468	1,443	24,666	10,175	164,881
16	41,360	32,849	8,742	20,993	6,693	6,027	5,928	3,095	5,810	11,279	1,552	27,636	9,989	180,693
17	43,847*	33,242	4,901	26,228	5,545	4,366	6,316	2,670	7,018	11,320	1,754*	28,397*	6,113	185,616*
18	36,274	29,250	4,903	27,074*	7,231	5,153	4,713	2,348	8,180*	8,156	1,371	22,534	10,076	167,168
19	34,127	27,131	9,823	20,292	5,853	3,435	5,222	2,840	4,287	8,704	1,310	23,652	10,829	169,085
20	33,082	29,816	12,587	14,388	5,733	2,264	4,984	2,279	3,955	8,660	1,256	23,640	8,623	155,328
21	30,364	29,089	12,354	16,437	5,021	1,829	4,648	2,279	4,237	7,877	950	18,827	7,224	141,113
22	39,956	33,830	11,909	17,181	6,896	3,574	5,928	2,780	5,696	10,238	1,433	24,845	10,571	174,807
23	45,279	29,280	7,593	23,348	5,190	5,295	6,858*	3,369*	4,999	10,892	1,801	26,967	11,958	182,534
24	44,081	29,280	4,898	26,817	6,509	5,039	6,006	2,817	5,870	10,440	1,480	24,264	10,983	178,423
25	41,479	29,346	8,134	22,430	6,164	4,934	5,771	2,898	5,325	10,116	1,493	15,064	11,122	164,273
26	38,009	29,381	13,863	15,677	6,567	4,956	5,344	2,716	5,194	9,270	1,347	23,160	9,677	165,343
27	31,243	29,699	14,076	10,638	5,969	2,456	4,782	2,139	4,748	8,325	1,188	20,859	9,570	149,683
28	29,587	30,084	20,450	9,947	6,222	1,627	5,068	2,279	5,010	8,901	1,309	18,982	9,470	148,876
29	36,988	32,264	22,480	10,090	6,687	4,388	5,789	2,871	4,670	9,864	1,739	22,776	13,102*	175,698
30	34,856	29,722	22,344	16,312	6,937	3,784	5,344	2,646	4,638	7,932	1,378	21,877	12,184	173,428
31	33,134	27,510	24,396*	17,281	5,470	1,733	4,148	1,976	4,502	6,928	1,270	19,269	11,498	159,135
Total	1,136,921	949,451	421,202	516,394	194,348	138,327	170,166	80,294	157,827	300,515	42,667	705,084	287,470	5,084,366

* Denotes maximum Daily Demand for Month.

UNITED FUEL GAS COMPANY, INC.

STATEMENT OF DAILY DEMAND

BY THE PRINCIPAL WHOLESALE CONSUMERS AND RETAIL DISTRICTS

MONTH OF FEBRUARY 1925

	Wholesale Consumers							Retail Districts							
Day of Month	Columbia Gas and Electric Company	Ohio Fuel Supply Company	Hope Natural Gas Company	Pittsburgh and West Virginia Gas Company	Central Kentucky Natural Gas Company	Louisville Gas and Electric Company	Portsmouth Gas Company	Ironton and Coal Grove	Ashland and Catlettsburg	Huntington and Kenova	Williamson	Charleston	Industrials Measured Separately	Total Send-Out by Days
1	25,252	27,387	16,659	14,270	3,929	633	5,876	1,636	5,624	6,437	1,414	17,147	11,548	133,712
2	25,827	23,956	15,369	14,110	3,978	1,528	4,102	1,788	4,142	6,838	984	17,130	10,209	129,934
3	37,135	28,406	19,014	16,659	5,664	3,515	5,938	2,583	5,202	9,995	1,373	20,482	8,765	164,693
4	43,734	33,445	19,462	19,694*	5,829	7,481*	6,813	3,172	6,325	12,190	1,101	24,859	8,003	189,908
5	43,554	33,963	16,304	17,278	4,295	4,861	7,058	3,602	6,961	11,681	1,815	24,281	8,779	184,372
6	44,323	28,306	16,921	17,900	4,669	4,916	7,231	3,651	5,318	11,548	1,494	23,029	10,845	180,361
7	43,191	31,104	16,536	17,326	5,182	4,563	6,856	3,390	6,147	10,725	1,645	23,254	10,768	180,789
8	36,450	27,804	18,007	18,307	5,796	4,869	5,338	2,743	4,812	9,319	1,371	22,847	13,367	171,229
9	37,396	30,209	17,136	18,576	6,262*	4,157	5,924	2,824	4,593	9,490	1,349	22,732	13,763*	174,431
10	40,609	33,194	16,028	17,218	4,950	4,287	6,700	2,491	5,003	11,313	1,386	24,697	11,186	181,059
11	39,506	30,377	15,743	17,277	5,989	5,351	6,158	2,721	5,389	10,807	1,231	22,876	9,649	173,074
12	39,764	32,414	16,565	17,342	5,660	4,932	6,006	2,949	5,367	10,112	1,337	23,104	9,355	176,927
13	30,749	29,499	20,396*	15,139	5,606	4,708	4,596	2,162	4,180	8,242	921	18,707	11,506	156,415
14	42,241	31,389	15,570	17,450	4,451	4,544	7,556	3,736	5,067	11,974	1,430	24,997	11,601	183,006
15	46,029	37,725*	15,516	15,758	5,006	2,966	7,691	3,849	7,165	14,128*	1,735	27,098	7,583	192,265
16	44,798	36,933	15,521	13,830	4,672	3,343	8,417	3,673	7,205	12,604	1,817	25,068	4,799	182,680
17	46,382	36,461	15,389	13,838	4,957	4,141	8,486	3,064*	7,372*	13,272	1,763	24,062	4,681	184,158
18	47,774*	36,937	15,357	13,754	4,602	3,382	8,939*	4,933	7,210	15,968	1,707	24,741	5,995	185,048
19	44,636	37,328	15,320	13,774	4,507	3,349	7,783	3,590	6,188	11,936	1,897*	25,908	5,434	179,688
20	41,019	31,104	13,431	13,606	4,758	3,988	7,423	3,528	6,023	11,368	1,735	28,378	10,374	173,928
21	38,184	32,732	13,736	14,038	4,437	5,031	6,772	3,299	5,831	10,356	1,634	25,647	11,367	173,107
22	40,438	33,126	13,289	13,705	4,478	4,043	7,149	3,578	6,657	11,313	1,653	27,368*	8,814	175,631
23	42,474	34,341	13,316	14,257	5,940	3,503	7,783	3,632	7,001	11,394	1,765	24,228	8,481	176,015
24	43,282	31,769	14,902	14,801	5,999	3,914	6,856	2,838	6,511	10,800	1,660	22,386	9,810	173,448
25	36,127	29,450	17,913	17,779	5,916	5,823	5,459	2,076	5,787	7,987	1,228	19,684	7,381	160,630
26	29,773	27,959	17,144	16,659	2,802	5,736	5,302	2,382	4,721	7,821	1,571	22,472	10,199	150,291
27	31,556	29,731	17,367	17,279	4,019	5,379	5,203	2,178	4,311	8,385	1,525	21,551	11,175	159,401
28	34,192	30,282	17,969	18,039	4,332	5,003	4,874	2,574	5,136	9,176	1,576	22,010	9,745	164,207
Total	1,096,327	886,111	447,734	450,065	130,708	119,971	181,966	86,629	159,367	295,143	41,417	649,490	263,382	4,810,340

* Denotes Maximum Daily Demand for Month.

UNITED FUEL GAS COMPANY, INC.

STATEMENT OF DAILY DEMAND

BY THE PRINCIPAL WHOLESALE CONSUMERS AND RETAIL DISTRICTS

MONTH OF DECEMBER 1928

Day of Month	Wholesale Consumers							Retail Districts						
	Columbia Gas and Electric Company	Ohio Fuel Supply Company	Hope Natural Gas Company	Pittsburgh and West Virginia Gas Company	Central Kentucky Natural Gas Company	Louisville Gas and Electric Company	Portsmouth Gas Company	Ironton and Coal Grove	Ashland and Catlettsburg	Huntington and Kenova	Williamson	Charleston	Industrials Measured Separately	Total Send-Out by Days
1	24,868	33,830	16,879	15,099	3,847	4,806*	3,047	2,088	4,804	7,986	1,279	19,834	6,861	144,416
2	21,849	28,923	17,206	15,279	4,096	4,343	2,976	1,962	4,806	8,346	1,106	17,573	7,296	136,757
3	22,624	31,780	17,238*	15,213	6,049	4,191	2,837	2,066	4,330	7,230	1,180	18,438	9,717	142,963
4	20,218	30,969	16,861	15,097	5,348	3,027	4,786	2,180	4,649	7,968	1,186	19,006	9,863	141,174
5	21,934	27,978	16,963	15,562	5,010	3,044	4,118	2,970*	5,000	6,604	1,096	17,144	9,436	134,886
6	25,881	31,176	16,979	15,079	6,219*	4,496	5,780	2,308	5,364	10,190	1,068	20,400	9,802	154,709
7	29,712	36,780	17,199	15,242	5,126	4,747	5,088	2,191	5,059	8,574	1,395	20,815	9,964*	160,852
8	20,866	29,158	16,972	14,176	4,438	3,068	4,088	1,670	3,601	6,552	1,136	16,062	8,868	130,317
9	13,787	28,873	16,900	15,436	3,905	3,096	3,328	1,283	3,109	5,366	765	13,477	8,288	114,253
10	23,311	32,526	16,909	15,301	3,549	3,066	3,812	1,804	3,091	5,361	988	14,726	9,176	132,320
11	31,650	36,818	16,862	14,803	5,888	3,438	4,209	2,237	4,259	7,907	1,221	19,528	9,286	157,099
12	34,344	36,678	17,079	14,643	5,286	3,601	4,648	2,306	4,530	7,876	1,229	20,837	8,777	161,685
13	31,432	33,176	16,918	15,018	4,817	3,126	4,912	2,341	4,638	7,950	1,119	18,981	8,884	153,140
14	43,215	36,789	17,263	15,188	4,003	3,102	6,255	2,960	5,857	10,557	1,578	25,313	9,200	180,368
15	44,482*	38,384	16,992	16,161	4,858	3,108	6,394*	2,899	6,947*	10,834*	1,587*	26,770*	7,188	182,404*
16	34,549	32,688	17,081	16,410*	4,606	3,068	5,229	2,319	5,832	9,232	1,259	20,091	7,431	159,745
17	34,888	32,892	17,081	15,896	4,988	3,300	5,617	2,686	6,388	9,501	1,459	24,718	9,084	167,791
18	33,883	33,886	17,086	15,309	4,664	3,358	5,430	2,673	5,914	9,523	1,513	23,349	9,179	164,709
19	30,860	32,811	16,919	15,360	4,376	3,298	5,192	2,146	6,136	8,653	1,480	21,470	8,724	155,421
20	24,401	32,688	16,883	15,281	4,280	3,064	4,348	2,094	4,491	8,433	1,336	19,317	8,864	141,377
21	17,988	28,218	16,973	15,283	3,862	3,271	3,883	1,663	3,710	5,998	1,064	16,416	8,048	129,498
22	16,696	31,170	16,883	15,904	3,485	3,283	3,409	1,369	4,113	5,836	966	15,186	8,938	128,327
23	20,537	30,878	16,896	15,307	3,781	3,167	4,209	1,663	3,009	7,420	1,011	13,968	8,286	127,084
24	27,817	27,866*	17,106	13,084	4,644	3,130	5,280	2,340	5,212	8,766	1,383	18,629	4,307	148,984
25	31,966	33,082	17,169	13,404	4,383	3,163	5,256	2,262	5,346	9,500	1,208	17,087	2,447	146,848
26	27,988	30,804	17,276	11,982	4,816	3,117	5,114	2,456	5,427	9,172	1,300	19,481	3,099	146,719
27	26,838	28,188	17,068	12,871	4,209	3,258	4,603	2,167	4,411	7,902	1,141	18,211	3,286	143,461
28	27,874	28,121	17,110	13,245	4,266	3,159	4,996	2,318	4,615	8,734	1,064	16,985	3,978	148,448
29	29,886	30,966	17,296	14,183	4,488	3,344	5,148	2,374	6,172	8,894	1,300	19,081	8,414	182,384
30	21,908	34,884	16,908	14,114	3,728	3,113	4,224	1,705	3,786	7,939	1,083	15,277	8,641	154,111
31	20,086	32,842	16,836	13,734	3,700	3,167	4,209	1,707	3,828	6,304	1,478	14,876	7,238	129,729
Total	837,316	1,021,498	527,756	461,843	130,686	108,229	142,079	66,953	148,427	249,108	37,968	584,998	284,618	4,844,840

* Denotes Maximum Daily Demand for Month.

JIRGAL EXHIBIT NO. 5

UNITED FUEL GAS COMPANY. INC. AND SUBSIDIARIES

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VIRGINIAN GASOLINE AND OIL COMPANY

DETAILED STATEMENTS PER BOOKS

FOR THE YEAR ENDED DECEMBER 31, 1923

SUPPORTING CONCLUSIONS REACHED

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIAR

AND

VIRGINIAN GASOLINE AND OIL COMPANY

BALANCE SHEET — DECEMBER

ASSETS	United Fuel Gas Company	Garfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	United Fuel Gas Company and Subsidiaries	Virginian Gasoline and Oil Company	Consolidated
PROPERTY, PLANT, RIGHTS, FRANCHISES, ETC.:							
Gas Department	$57,108,115.52	$1,835,153.87	$ 698,830.65	$ -	$59,636,100.24	$ -	$59,636,100.24
Gasoline Department	-	-	48,532.14	-	48,532.14	1,704,770.67	1,750,302.81
Oil Department	-	-	1,897,444.64	-	1,897,444.64	10,552,465.54	12,449,910.18
Carbon Black Department	-	-	-	-	-	113,868.44	113,868.44
Incomplete Construction	106,717.70	3,471.60	308.37	-	110,497.67	8,536.69	119,034.16
	$57,211,833.22	$1,838,625.47	$2,639,116.00	$ -	$61,689,574.69	$12,379,641.14	$74,069,215.83
INVESTMENTS:							
Securities Owned	$ 865,452.44	$ -	$ -	X $677,000.00	$ 188,452.44	$ -	$ 188,452.44
Sinking Fund Investments	1,052,887.76	-	-	-	1,052,887.76	156,408.99	1,209,296.75
Reacquired Securities	103,053.00	-	-	-	103,053.00	-	103,053.00
	$ 2,021,393.20	$ -	$ -	X $677,000.00	$ 1,344,393.20	$ 156,408.99	$ 1,500,802.19
DEFERRED CHARGES:							
Prepaid Insurance	$ 39,319.07	$ 1,658.46	$ 1,219.27	$ -	$ 42,196.82	$ 34,057.23	$ 76,254.05
Prepaid Rentals	150,000.00	-	-	-	150,000.00	-	150,000.00
Prepaid Taxes	10,974.39	270.98	60.00	-	11,305.37	3,667.50	14,972.87
	$ 190,293.46	$ 1,929.44	$ 1,279.27	$ -	$ 193,502.19	$ 37,724.73	$ 231,226.92
CURRENT ASSETS:							
Cash	$ 879,382.47	$ 113,924.80	$ 7,744.22	$ -	$ 1,001,051.49	$ 526,776.28	$ 1,527,823.77
Notes Receivable	15,208.95	-	-	-	15,208.95	-	15,208.95
Accounts Receivable-							
Customers	262,371.31	66,550.76	-	-	328,922.07	-	328,922.07
Miscellaneous	1,148,975.98	36,139.47	5,123.04	X 158,065.44	992,169.05	321,974.83	1,314,143.38
Inter-Company (Net)	X 307,451.73	X 14,813.20	4,833.19	-	X 327,421.03	227,421.03	-
Materials and Supplies	248,251.13	10,813.84	3,128.91	-	272,324.68	141,964.16	414,288.84
	$ 2,347,988.92	$ 233,532.37	$ 20,829.36	X $158,065.44	$ 2,404,268.21	$ 1,218,132.00	$ 3,622,397.21
	$61,771,488.80	$2,074,087.30	$2,661,224.63	X $677,000.00	$65,631,738.29	$13,791,936.86	$79,413,672.15

(X Denotes red in copy.)

CAPITAL STOCK							
FUNDED DEBT:							
First Mortgage							
CURRENT LIABILITIES:							
Accounts Payable							
Accrued Taxes							
Accrued Interest							
Security Deposits							
Unclaimed Accounts							
RESERVES:							
Depletion and Actual Cost							
Depletion Reserve							
Contingent Reserve							
CAPITAL SURPLUS							
SURPLUS:							
Appropriated							
Unappropriated							

ITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

E SHEET — DECEMBER 31, 1923

...ian ...ne and ...mpany	Consolidated	LIABILITIES	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	United Fuel Gas Company and Subsidiaries	Virginian Gasoline and Oil Company	Consolidated
		CAPITAL STOCK							
-	$39,636,100.24		$30,000,000.00	$ 547,000.00	$ 130,000.00	X$677,000.00	$30,000,000.00	$ 890,200.00	$30,890,200.00
4,770.67	1,750,302.81								
3,465.34	12,449,910.18	FUNDED DEBT:							
3,868.44	113,868.44	First Mortgage 6% Bonds Outstanding	$ 8,449,000.00	$ 755,000.00	$ -	$ -	$ 9,204,000.00	$ 1,717,000.00	$10,921,000.00
8,536.49	119,034.16								
9,641.14	$74,069,215.83	CURRENT LIABILITIES:							
		Accounts Payable	$ 190,114.37	$ 193,820.24	$ 49,304.28	X$198,065.44	$ 235,173.42	$ 41,404.77	$ 276,578.19
		Accrued Taxes	499,744.87	-	97.46	-	499,842.03	207,753.48	707,595.48
		Accrued Interest	16,632.17	121.14	-	-	16,653.31	-	16,653.31
-	$ 188,452.44	Security Deposits	122,160.00	7,075.00	-	-	129,235.00	-	129,235.00
6,408.99	1,209,296.75	Unclaimed Accounts	9,174.72	14.28	92.32	-	9,281.36	-	9,281.36
-	103,053.00								
6,408.99	$ 1,500,802.19		$ 837,725.83	$ 201,030.70	$ 49,494.03	X$198,065.44	$ 890,185.12	$ 249,158.22	$ 1,139,343.34
		RESERVES:							
		Depletion and Depreciation Reserve Based on Actual Cost of Property	$ 9,267,814.44	$ 638,177.62	$ 419,248.37	$ -	$10,325,240.43	$ 2,466,872.35	$12,791,812.78
4,087.23	$ 56,284.05		8,662,630.70	-	846,468.78	-	9,509,099.48	1,645,013.61	11,154,113.09
-	150,000.00	Depletion Reserve Based on Appraisal Value	-	38,723.93	-	-	38,723.93	-	38,723.93
5,667.50	14,972.87	Contingent Reserve							
9,754.73	$ 221,256.92		$17,930,445.14	$ 673,901.55	$1,265,717.15	$ -	$19,870,063.84	$ 4,111,885.96	$23,981,649.80
		CAPITAL SURPLUS FROM APPRAISAL	$ 2,225,280.72	$ -	$ 973,911.83	$ -	$ 3,199,192.55	$ 6,328,103.63	$ 9,527,296.18
6,778.28	$ 1,527,823.77								
-	15,208.95	SURPLUS:							
-	350,922.07	Appropriated for Sinking Fund Purposes	$ 1,506,411.90	$ 16,388.34	$ -	$ -	$ 1,522,770.24	$ 224,710.39	$ 1,747,480.63
2,974.83	1,314,143.58	Unappropriated	822,625.21	X119,203.29	242,101.62	-	945,523.54	261,178.66	1,206,702.20
7,421.03	-		$ 2,329,037.11	$ 102,844.95	$ 242,101.62	$ -	$ 2,468,293.78	$ 485,889.05	$ 2,954,182.83
1,944.16	414,298.84								
8,132.00	$ 3,622,397.21								
6,936.86	$79,413,672.15		$61,771,468.80	$2,074,087.30	$2,661,224.63	X$479,065.41	$65,631,735.29	$13,781,936.86	$79,413,672.15

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VIRGINIAN GASOLINE AND OIL COMPANY

COMPARISON OF INCOME ACCOUNT

FOR THE YEARS ENDED DECEMBER 31, 1922 AND 1923

Particulars	Year Ended December 31, 1922					
	United Fuel Gas Company	Cabin Creek Gas Company	United Fuel Gas Company and Subsidiary Consolidated	Virginian Gasoline and Oil Company (Eight Months)	Combined	United Gas Co
GROSS EARNINGS:						
Gas Department	$7,830,024.60	$ 46,347.79	$7,228,489.01	$ -	$ 7,228,489.01	$7,719,
Gasoline Department	1,206,225.06	21,243.28	1,226,468.33	1,836,832.00	3,063,300.33	
Oil Department	187,830.60	47,683.96	206,484.46	300,056.88	506,541.34	
Carbon Black Department	38,813.01	-	38,813.01	101,044.91	136,857.92	
Tank Car Department	19,335.74	-	19,335.74	39,381.64	58,717.38	
Total Gross Earnings	$8,648,228.90	$115,245.03	$8,715,590.55	$2,287,315.43	$10,982,906.98	$7,719,
OPERATING EXPENSES AND ORDINARY TAXES:						
Gas Department	$3,324,649.19	$ 25,857.71	$3,302,323.52	$ -	$ 3,302,323.52	$3,449,
Gasoline Department	14,693.47	4,389.96	19,083.43	483,948.66	503,032.09	×367,
Oil Department	45,089.97	17,325.30	62,415.27	104,934.57	167,349.84	
Carbon Black Department	×3,733.09	-	×3,733.09	29,636.46	25,903.37	×18,
Tank Car Department	2,778.67	-	2,778.67	9,852.83	12,608.40	
Total Operating Expenses and Taxes	$3,383,478.11	$ 47,272.97	$3,382,864.70	$ 628,352.52	$ 4,011,217.22	$3,068,
NET EARNINGS FROM OPERATIONS (Before Federal Taxes, Depletion and Depreciation):						
Gas Department	$3,905,375.41	$ 20,790.08	$3,926,165.49	$ -	$ 3,926,165.49	$4,269,
Gasoline Department	1,190,831.58	16,853.32	1,207,384.90	1,342,883.34	2,550,268.24	367
Oil Department	112,740.53	30,328.66	143,069.19	195,122.31	338,191.50	
Carbon Black Department	39,846.10	-	39,846.10	71,408.48	110,954.53	18
Tank Car Department	16,560.17	-	16,560.17	29,548.81	46,108.98	
	$5,284,753.79	$ 67,972.06	$5,332,725.85	$1,638,962.91	$ 6,971,688.76	$4,655
OTHER INCOME	42,213.08	×53.38	42,159.70	4,921.50	47,081.20	22
Total Net Earnings (Before Federal Taxes, Depletion and Depreciation)	$5,326,966.87	$ 67,918.68	$5,374,885.55	$1,643,884.41	$ 7,018,769.96	$4,677
DEDUCTIONS FROM NET EARNINGS:						
Bond Interest	$ 680,295.87	$ -	$ 680,295.87	$ 65,660.00	$ 745,955.87	$ 480
General Interest	5,865.65	4,950.76	10,816.41	-	10,816.41	80
Appropriations to Sinking Fund	730,016.64	-	730,016.64	51,822.24	781,838.88	560
	$1,416,178.16	$ 4,950.76	$1,421,128.92	$1,117,482.24	$ 1,538,611.16	$1,088
Surplus Net Income before Federal Taxes, Depletion and Depreciation	$3,890,788.71	$ 62,967.92	$3,953,756.63	$1,526,402.17	$ 5,480,158.80	$3,617
PROFIT AND LOSS ADJUSTMENTS	44,302.23	×3,499.34	40,802.89	×11,316.15	29,486.74	×2
Surplus Net Income before Federal Taxes, Depletion and Depreciation	$3,935,090.94	$ 59,468.58	$3,994,559.52	$1,515,086.02	$ 5,509,645.54	$3,60

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928 AND 1923

Year Ended December 31, 1923

ombined	United Fuel Gas Company	Warfield Natural Gas Company (Six Months)	Cabin Creek Gas Company	United Fuel Gas Company and Subsidiaries Consolidated	Virginian Gasoline and Oil Company	Combined
226,489.01	$7,719,449.99	$487,707.68	$ 39,893.34	$7,730,176.40	$ -	$ 7,730,176.40
063,300.53	-	-	49,816.43	49,816.43	2,964,044.10	3,013,860.53
608,541.34	-	-	38,243.99	38,243.99	379,530.82	417,774.81
136,857.92	-	-	-	-	145,426.96	145,426.96
88,717.38	-	-	-	-	81,340.70	81,340.70
962,906.98	$7,719,449.99	$487,707.68	$127,953.76	$7,818,236.82	$3,570,342.58	$11,388,579.40
302,323.52	$3,449,936.56	$466,353.43	$ 23,041.30	$3,422,456.68	$ -	$ 3,422,456.68
305,032.09	×367,941.70	-	23,870.70	×344,071.00	1,191,094.62	847,023.62
167,349.84	-	-	16,177.64	16,177.64	133,398.83	149,576.47
25,903.37	×16,347.97	-	-	×16,347.97	34,990.21	18,642.24
12,608.40	-	-	-	-	29,186.00	29,186.00
011,217.22	$3,065,646.89	$466,353.43	$ 63,089.64	$3,078,215.35	$1,388,669.66	$ 4,466,885.01
926,166.49	$4,269,813.43	$ 21,354.25	$ 16,852.04	$4,307,719.72	$ -	$ 4,307,719.72
550,868.24	367,941.70	-	28,945.73	393,887.43	1,772,949.48	2,166,836.91
338,191.50	-	-	22,066.36	22,066.36	246,131.99	268,198.34
110,964.55	16,347.97	-	-	16,347.97	110,436.75	126,784.72
46,108.98	-	-	-	-	52,184.70	52,184.70
971,688.76	$4,653,803.10	$ 21,354.25	$ 64,864.12	$4,740,021.47	$2,181,672.92	$ 6,921,694.39
47,081.20	23,597.00	-	-	23,597.00	27,445.52	51,042.52
018,769.96	$4,677,400.10	$ 21,354.25	$ 64,864.12	$4,763,618.47	$2,209,118.44	$ 6,972,736.91
745,965.87	$ 480,150.80	$ 22,650.00	$ -	$ 502,800.80	$ 94,581.08	$ 597,381.88
10,816.41	30,210.56	207.49	1,350.00	31,768.05	-	31,768.05
781,838.88	549,311.93	16,358.34	-	565,670.27	84,604.23	650,274.50
538,611.16	$1,059,673.29	$ 39,215.83	$ 1,350.00	$1,100,239.12	$ 179,185.31	$ 1,279,424.43
480,158.80	$3,617,726.81	×$ 17,861.58	$ 63,514.12	$3,663,379.35	$2,029,933.13	$ 5,693,312.48
29,486.74	×12,011.49	200.10	×2,729.56	×15,210.95	×3,055.49	×18,266.43
509,645.54	$3,605,715.32	×$ 17,661.48	$ 60,714.56	$3,648,168.40	$2,026,877.64	$ 5,675,046.05

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VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF SURPLUS FOR THE YEARS ENDED DECEMBER 31, 1922 AND 19

Year Ended December 31, 1922

EARNED SURPLUS	United Fuel Gas Company	Cabin Creek Gas Company	Total United Fuel Gas Company and Subsidiary	Virginian Gasoline and Oil Company	Consolidated	United Gas C
BALANCE AT BEGINNING OF PERIOD	$ 761,184.99	$ 261,711.87	$ 1,022,896.86	$ -	$ 1,022,896.86	$ 68
ADD- SURPLUS NET INCOME	3,938,090.94	59,468.58	3,994,559.52	1,515,086.02	5,509,645.54	3,600
Balance	$4,696,275.93	$ 321,180.45	$ 5,017,456.38	$1,515,086.02	$ 6,532,542.40	$3,67
DEDUCT:						
Dividends	$2,850,000.00	$ -	$ 2,850,000.00	$ 600,000.00	$ 3,450,000.00	$1,450
Provision for Depletion and Depreciation on Book Cost of Property	1,340,321.46	65,816.06	1,406,137.52	381,586.89	1,787,724.41	1,231
Provision for Federal Income Taxes	270,752.68	-	270,752.68	126,931.92	397,684.60	113
Reserve for Sinking Fund on Bonds Retired	11,780.86	-	11,780.86	-	11,780.86	X 18
Suspense Earnings in Litigation	-	-	-	-	-	X 10
Premium on Bonds Retired	12,743.71	-	12,743.71	-	12,743.71	13
Unamortized Discount on Bonds Retired	15,905.72	-	15,905.72	-	15,905.72	13
Depreciation and Adjustment	125,936.64	5,965.56	131,902.20	11,465.76	143,367.96	72
Sundry Debits	-	4,237.13	4,237.13	14,500.26	18,737.39	
Total Deductions	$4,627,441.07	$ 76,018.75	$ 4,703,459.82	$1,134,484.83	$ 5,837,944.65	$2,661
BALANCE AT END OF PERIOD	$ 68,834.86	$ 245,161.70	$ 313,996.56	$ 380,601.19	$ 694,597.75	$ 824
CAPITAL SURPLUS CREATED BY APPRAISAL						
BALANCE AT BEGINNING OF PERIOD	$12,500,797.99	$ 562,942.46	$13,063,740.45	$ -	$13,063,740.45	$3,87
ADD:						
Amount Created by Appraisal of Oil Acreage	-	775,000.00	775,000.00	-	775,000.00	
Amount Created by Appraisal of Properties Purchased	-	47,382.80	47,382.80	-	47,382.80	
Amount Transferred to Virginian Gasoline and Oil Company	X6,536,694.21	-	X6,536,694.21	6,536,694.21	-	
Balance	$ 5,964,103.78	$1,385,325.26	$ 7,349,429.04	$6,536,694.21	$13,886,123.25	$3,87
DEDUCT:						
Provision for Depletion and Depreciation of Value Added through Appraisal	$ 1,194,164.75	$ 391,906.27	$ 1,586,071.02	$ 131,511.30	$ 1,717,582.32	$1,65
Stock Dividend (Being Total Capital Stock of Virginian Gasoline and Oil Company)	890,200.00	-	890,200.00	-	890,200.00	
Total Deductions	$ 2,084,364.75	$ 391,906.27	$ 2,476,271.02	$ 131,511.30	$ 2,607,782.32	$1,65
BALANCE AT END OF PERIOD	$ 3,879,739.03	$ 993,418.99	$ 4,873,158.02	$6,405,182.91	$11,278,340.93	$2,22

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COMPANY

EMBER 31, 1932 AND 1933

Consolidated	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Total United Fuel Gas Company and Subsidiaries	Virginian Gasoline and Oil Company	Consolidated
			Year Ended December 31, 1933			
$ 1,022,896.86	$ 68,834.86	$ -	$345,161.70	$ 313,996.56	$ 380,601.19	$ 694,597.75
5,809,645.54	3,605,115.32	Y 17,661.48	60,714.56	3,648,168.40	2,026,877.65	5,675,046.05
$ 6,832,542.40	$3,675,950.18	$ 17,661.48	$305,876.26	$3,962,164.96	$2,407,478.84	$ 6,369,643.80
$ 3,450,000.00	$1,450,000.00	$ -	$ -	$1,450,000.00	$1,550,000.00	$ 3,000,000.00
1,787,724.41	1,231,916.31	95,748.01	61,569.32	1,389,233.64	372,818.03	1,762,051.67
307,884.60	113,308.08	-	-	113,308.08	205,443.20	318,951.28
11,780.86	×186,500.00	-	-	×186,500.00	-	×186,500.00
-	×108,527.87	-	-	×108,527.87	-	×108,527.87
12,743.71	141,098.57	-	-	141,098.57	-	141,098.57
15,908.72	137,186.85	-	-	137,186.85	-	137,186.85
143,367.96	72,643.03	5,793.80	2,205.32	80,642.15	18,038.95	98,681.10
18,737.39	-	-	-	-	-	-
$ 5,837,944.65	$2,851,324.97	$101,541.81	$ 63,774.64	$3,016,641.42	$2,146,300.18	$ 5,162,941.60
$ 694,597.75	$ 824,625.21×	$119,203.29	$242,101.62	$ 945,523.54	$ 261,178.66	$ 1,206,702.20
$13,063,740.45	$3,879,739.03	$ -	$993,418.99	$4,873,158.02	$6,405,182.91	$11,278,340.93
775,000.00	-	-	-	-	-	-
47,382.80	-	-	-	-	-	-
-	-	-	-	-	-	-
$13,886,123.25	$3,879,739.03	$ -	$993,418.99	$4,873,158.02	$6,405,182.91	$11,278,340.93
$ 1,717,882.32	$1,694,458.31	$ -	$ 19,807.16	$1,673,965.47	$ 77,079.28	$ 1,751,044.75
890,200.00	-	-	-	-	-	-
$ 2,607,782.32	$1,694,458.31	$ -	$ 19,807.16	$1,673,965.47	$ 77,079.28	$ 1,751,044.75
$11,278,340.93	$2,225,280.72	$ -	$973,611.83	$3,199,192.55	$6,328,103.63	$ 9,527,296.18

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT OF REVENUES AND EXPENSES - GAS DEPARTMENT

FOR THE YEARS ENDED DECEMBER 31, 1942 AND 1943

Particulars	Year Ended December 31, 1942				Year Ended December 31, 1943				
	United Fuel Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated	United Fuel Gas Company	*arfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated
GROSS EARNINGS:									
Revenues from Sale of Gas-									
Retail Service-									
Domestic	$1,667,759.34	$ -	$ -	$1,667,759.34	$1,830,489.72	$145,300.37	$ -	$ -	$1,975,790.09
Industrial	1,685,311.22	-	-	1,685,311.22	1,575,203.95	214,140.82	-	-	1,789,344.77
Field	58,715.52	-	-	58,715.52	70,683.15	-	-	-	70,683.15
Total Retail Services	$3,411,786.08	$ -	$ -	$3,411,786.08	$3,476,376.82	$359,441.19	$ -	$ -	$3,835,816.01
Wholesale Service-									
Columbia Gas and Electric Company	$ 696,376.83	$ -	$ -	$ 696,376.83	$ 734,196.34	$ -	$ -	$ -	$ 734,196.34
Ohio Fuel Supply Company	548,890.44	-	-	548,890.44	547,904.35	-	-	-	547,904.35
Central Kentucky Natural Gas Company	280,246.58	-	-	280,246.58	307,116.60	-	-	-	307,116.60
Louisville Gas and Electric Company	356,703.95	-	-	356,703.95	224,742.10	-	-	-	224,742.10
Portsmouth Gas Company	357,363.60	-	-	357,363.60	383,322.60	-	-	-	383,322.60
Hope Natural Gas Company	596,304.68	-	-	596,304.68	862,356.64	-	-	-	862,356.64
Pittsburgh and West Virginia Gas Company	954,245.70	-	-	954,245.70	785,890.34	-	-	-	785,890.34
Inter-Company Sales	-	46,083.38	X46,083.38	-	349,126.80	127,621.84	38,325.97	X515,074.61	-
All Others	25,172.00	-	-	25,172.00	17,474.58	-	-	-	17,474.58
Total Wholesale Service	$3,795,303.75	$46,083.38	X46,083.38	$3,795,303.75	$4,212,130.35	$127,621.84	$38,325.97	X515,074.61	$3,863,003.55
Total Revenues from Sale of Gas	$7,207,089.83	$46,083.38	X46,083.38	$7,207,089.83	$7,688,507.17	$487,063.03	$38,325.97	X515,074.61	$7,698,821.56
Miscellaneous Gas Revenues	10,347.11	-	-	10,347.11	14,594.13	213.14	1,174.29	-	15,981.56
Total Operating Revenues	$7,217,436.94	$46,083.38	X46,083.38	$7,217,436.94	$7,703,101.30	$487,276.17	$39,500.26	X515,074.61	$7,714,803.12
Non-Operating Revenues	12,987.66	464.41	X1,800.00	11,652.07	16,348.69	431.51	393.08	X1,800.00	15,373.28
Total Gross Earnings	$7,230,424.60	$46,547.79	X47,883.38	$7,229,089.01	$7,719,449.99	$487,707.68	$39,893.34	X516,874.61	$7,730,176.40
OPERATING EXPENSES AND ORDINARY TAXES:									
Gas Purchased	$ 602,493.76	$ -	X46,083.38	$ 556,410.38	$ 751,145.36	$363,192.94	$ -	X515,074.61	$ 619,263.69
Production Expense-									
Operation-									
Superintendence	$ 13,143.06	$ 13.79	$ -	$ 13,156.85	$ 7,057.84	$ 299.31	$ -	$ -	$ 7,357.15
Operating Wells and Lines	113,943.94	3,367.72	-	117,311.66	109,176.59	2,479.63	2,448.79	-	114,104.41
Production Tools and Supplies	9,716.27	18.70	-	9,736.97	9,039.99	-	11.45	-	9,051.44
Field Measuring Stations	16,939.58	183.67	-	17,123.25	16,992.41	236.15	195.55	-	17,423.91
Leasehold Expenses	46,736.39	-	-	46,736.39	47,837.39	804.56	-	-	48,641.95
Rental on Unoperated Leases	641,135.25	-	-	641,135.25	606,812.27	21,711.12	-	-	628,523.39
Wells Royalties	175,188.58	6,583.36	-	181,771.94	184,346.68	2,836.24	5,043.84	-	192,226.76
Cancelled and Surrendered Leases	1,009.93	-	-	1,009.93	229.97	3.25	-	-	233.22
Miscellaneous and Insurance	29,211.48	73.99	-	29,285.27	50,022.53	56.56	66.71	-	50,145.82
Total Operation	$1,047,026.28	$10,241.23	$ -	$1,057,267.51	$1,031,117.57	$ 28,504.04	$ 7,765.34	$ -	$1,066,384.95

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Particulars	Year Ended December 31, 1922				Year Ended December 31, 1923				
	United Fuel Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated
OPERATING EXPENSES AND ORDINARY TAXES (Cont'd):									
Production Expense (Cont'd)-									
Maintenance-									
Changing Construction	$ 14,351.01	$ 1,232.70	$ -	$ 15,583.71	$ 9,299.59	$ 65.12	$ 88.42	$ -	$ 9,473.13
Repairs to Wells	111,730.65	1,066.91	-	112,797.26	116,698.35	4,440.08	266.07	-	121,404.50
Repairs to Field Lines	18,394.41	771.54	-	19,165.95	23,085.85	792.59	268.89	-	24,147.33
Field Measuring Stations	5,904.42	-	-	5,904.42	4,079.14	105.42	78.20	-	4,262.76
Total Maintenance	$ 146,380.49	$ 3,071.05	$ -	$ 149,451.34	$ 153,162.93	$ 5,423.21	$ 701.58	$ -	$ 159,287.72
Total Production Expense	$1,193,466.57	$13,316.48	$ -	$1,206,718.85	$1,185,280.80	$ 33,927.25	$ 8,464.92	$ -	$1,227,672.67
Transmission-									
Operation-									
Superintendence	$ 4,916.22	$ -	$ -	$ 4,916.22	$ 4,660.54	$ 11.95	$ -	$ -	$ 4,672.49
Transmission Lines	32,107.23	-	-	32,107.23	31,344.51	1,398.74	-	-	32,743.25
Transmission Tools and Supplies	1,772.94	-	-	1,772.94	2,858.01	20.20	-	-	2,878.21
Compressing Stations	345,685.81	5,270.61	-	350,956.42	370,951.61	2,742.00	7,998.09	-	381,691.70
Measuring Stations	8,937.49	-	-	8,937.49	9,429.47	190.22	-	-	9,619.69
Miscellaneous and Insurance	1,544.31	-	-	1,544.31	9,400.08	-	-	-	9,400.08
Total Operation	$ 394,964.00	$ 5,270.61	$ -	$ 400,234.61	$ 428,624.22	$ 4,363.11	$ 7,998.09	$ -	$ 440,965.42
Maintenance-									
Changing Construction	$ 5,332.68	$ -	$ -	$ 5,332.68	$ 6,563.71	$ 2,156.19	$ -	$ -	$ 8,719.90
Transmission Lines	44,863.92	-	-	44,863.92	42,021.74	1,754.96	-	-	43,776.70
Compressing Stations	111,804.53	1,563.04	-	113,367.57	98,351.63	2,445.96	3,915.81	-	104,913.40
Measuring Stations	1,554.96	-	-	1,554.96	1,558.96	149.82	-	-	1,708.78
Total Maintenance	$ 163,554.09	$ 1,563.04	$ -	$ 165,117.13	$ 148,496.04	$ 6,506.93	$ 3,915.81	$ -	$ 159,118.78
Total Transmission	$ 558,536.09	$ 6,733.65	$ -	$ 565,269.74	$ 577,320.26	$ 10,850.04	$11,913.90	$ -	$ 600,084.20
Distribution-									
Operation-									
Superintendence	$ 4,274.92	$ -	$ -	$ 4,274.92	$ 3,778.30	$ 507.33	$ -	$ -	$ 4,285.63
Operating Lines	22,387.41	-	-	22,387.41	24,201.21	1,304.87	-	-	25,506.08
Connecting and Disconnecting Meters	30,915.13	-	-	30,915.13	27,965.79	3,303.09	-	-	31,268.88
Electrolysis	109.38	-	-	109.38	16.29	-	-	-	16.29
Shop Expense	6,763.80	-	-	6,763.80	7,741.76	401.74	-	-	8,143.50
Miscellaneous and Insurance	1,984.96	-	-	1,984.96	2,869.48	32.90	-	-	2,902.38
Total Operation	$ 66,615.60	$ -	$ -	$ 66,615.60	$ 66,552.83	$ 5,569.93	$ -	$ -	$ 72,122.76
Maintenance-									
Changing Construction	$ 28,426.08	$ -	$ -	$ 28,426.08	$ 20,355.62	$ 4,816.08	$ -	$ -	$ 25,171.70
Lines and Regulators	9,916.92	-	-	9,916.92	18,753.93	2,016.98	-	-	20,770.91
Meter and House Regulators	21,858.76	-	-	21,858.76	21,172.69	2,116.02	-	-	23,288.71
Services	12,605.70	-	-	12,605.70	15,496.73	2,343.30	-	-	17,840.03
Total Maintenance	$ 72,807.46	$ -	$ -	$ 72,807.46	$ 75,778.97	$ 11,292.38	$ -	$ -	$ 87,071.35
Total Distribution	$ 139,423.06	$ -	$ -	$ 139,423.06	$ 142,331.80	$ 16,862.31	$ -	$ -	$ 159,194.11

Particulars	Year Ended December 31, 1924				Year Ended December 31, 1923				
	United Fuel Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated
OPERATING EXPENSES AND ORDINARY TAXES (Cont'd):									
Commercial-									
Reading Meters	$ 22,679.56	$ -	$ -	$ 22,679.56	$ 20,529.34	$ 1,698.39	$ -	$ -	$ 22,227.73
Salaries of Office Force and Collectors	74,286.68	-	-	74,286.68	76,270.94	6,230.63	-	-	82,501.57
Rents, Heat, Light, Telephone Rentals and Tolls	9,351.97	-	-	9,351.97	8,823.40	935.59	-	-	9,758.99
Stationery and Supplies	6,546.50	-	-	6,546.50	6,892.75	656.04	-	-	7,548.79
Miscellaneous and Insurance	157.23	-	-	157.23	165.31	37.80	-	-	203.11
Total Commercial	$ 113,021.94	$ -	$ -	$ 113,021.94	$ 112,681.74	$ 9,558.45	$ -	$ -	$ 122,240.19
General and Inter-Departmental Expense-									
General Expense-									
Salaries and Expense of General Officers	$ 66,568.57	$ 486.14	900.00	$ 66,148.71	$ 73,707.68	$ 2,159.87	$ 328.68	X $ 900.00	$ 75,296.23
General Office Expense	67,478.48	397.95	X 540.00	67,334.43	71,977.14	2,224.45	203.64	X 540.00	73,865.23
Private Telegraph and Telephone Lines	16,385.69	-	-	16,385.69	19,080.02	1,459.64	-	-	20,539.66
Legal Expense	40,351.41	-	-	40,351.41	65,653.98	3,028.94	-	-	68,682.92
Insurance	5,483.05	73.86	-	5,556.91	8,561.42	125.38	23.49	-	8,710.29
Damages (Judgments and General Damage Claims)	8,703.80	-	-	8,703.80	3,921.86	32.34	-	-	3,953.90
Relief and Annuities	10,711.63	-	-	10,711.63	7,918.05	11.00	34.99	-	7,964.04
Miscellaneous	60,433.41	120.16	-	60,553.57	82,629.26	2,403.84	-	-	85,033.10
Outside Operations	5,156.46	-	-	5,156.46	5,430.37	353.06	-	-	5,783.43
Bad Debts	781.60	-	-	781.60	433.66	163.21	-	-	596.87
Total General Expense	$ 281,846.10	$ 1,078.11	X $ 1,440.00	$ 281,484.21	$ 339,313.14	$ 11,961.73	$ 890.80	X $ 1,440.00	$ 350,425.67
Inter-Departmental-									
Gas Used by Company- Credit	X $ 143,133.45	$ 77.16	$ -	X 143,210.61	X 143,760.04	X $ 266.50	$ -	$ -	X $ 144,026.54
Cleaning Out Tools	2,894.28	-	-	2,894.28	X 1,440.34	-	-	-	X 4,334.62
Company Teaming	1,881.39	-	-	1,881.39	2,250.87	-	-	-	2,250.87
Rents and Repairs to Buildings	1,448.55	237.00	X 360.00	1,325.55	2,683.44	X 3.81	323.68	X 360.00	2,642.31
Cleaning Out Tools- Oil	X 664.67	X 104.17	-	X 768.24	-	-	-	-	-
Machine and Blacksmith Shop	112.84	-	-	112.84	1,049.19	-	-	-	1,049.19
Yard Water Station	-	X 68.35	-	X 68.35	-	-	-	-	-
Total Inter-Departmental	X $ 137,211.66	$ 12.68	$ 360.00	X 137,384.34	X 143,221.92	X 270.31	$ 323.68	X $ 360.00	X $ 142,529.53
Total General and Inter-Departmental Expense	$ 143,634.44	$ 1,065.43	$ 1,800.00	$ 144,099.87	$ 197,091.22	$ 11,691.42	$ 913.48	X $ 1,800.00	$ 207,896.12
Total Above Items	$2,751,718.86	$21,111.36	X $47,683.36	$2,724,943.84	$2,965,850.86	$466,082.41	$21,292.30	X $516,274.61	$2,936,350.98
Taxes (Other than Income and Excess Profits Taxes)	574,933.33	4,446.35	-	577,379.68	484,085.68	271.02	1,749.00	-	486,105.70
Total Operating Expenses and Ordinary Taxes	$3,324,649.19	$25,557.71	X $47,683.36	$3,302,323.52	$3,449,936.56	$466,353.43	$23,041.30	X $516,274.61	$3,422,456.68
Net Earnings before Federal Taxes, Depletion and Depreciation	$3,905,375.41	$20,790.00	$ -	$3,926,165.49	$4,269,513.43	$ 21,384.28	$16,852.04	$ -	$4,307,719.72

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Particulars	Year Ended December 31, 1922				Year Ended December 31, 1923				
	United Fuel Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated	United Fuel Gas Company	Warfield Natural Gas Company	Cabin Creek Gas Company	Eliminations	Consolidated
SUMMARY OF REVENUES AND EXPENSES									
GROSS EARNINGS:									
Revenues from Sale of Gas	$7,207,089.83	$46,083.38	X$46,083.38	$7,207,089.83	$7,688,807.17	$487,063.03	$38,328.97 X	$515,074.61	$7,698,821.56
Miscellaneous Gas Revenues	10,347.11	-	-	10,347.11	14,394.13	213.14	1,174.29	-	15,981.56
Non-Operating Revenues	12,587.66	264.41	X1,800.00	11,052.07	16,348.69	431.81	393.08	X1,800.00	15,373.28
Total Gross Earnings	$7,230,024.60	$46,347.79	X47,883.38	$7,228,489.01	$7,719,449.99	$487,707.68	$39,893.34 X	$516,874.61	$7,730,176.40
OPERATING EXPENSES AND ORDINARY TAXES:									
Operation	$2,368,974.02	$16,477.27	X47,883.38	$2,337,567.91	$2,588,212.94	$442,859.89	$16,674.91 X	$516,874.61	$2,530,873.13
Maintenance	382,741.84	4,634.09	-	387,375.93	377,637.94	23,222.52	4,617.39	-	405,477.85
Taxes (Other than Income and Excess Profits Taxes)	574,933.33	4,446.35	-	577,379.68	484,085.68	271.02	1,749.00	-	486,105.70
Total Operating Expenses and Ordinary Taxes	$3,324,649.19	$25,557.71	X47,883.38	$3,302,323.52	$3,449,936.56	$466,353.43	$23,041.30 X	$516,874.61	$3,422,456.68
Net Earnings before Federal Taxes, Depletion and Depreciation	$3,905,375.41	$20,790.08	$ -	$3,926,165.49	$4,269,513.43	$ 21,354.28	$16,852.04	$ -	$4,307,719.72

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

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VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF REVENUES AND EXPENSES - GASOLINE DEPARTMENT

Particulars	Year Ended December 31, 1922						Year Ended December 31, 1923			
	United Fuel Gas Company Four Months Ended May 31, 1922	Virginian Gasoline and Oil Company Eight Months Ended Dec. 31, 1922	Eliminations	Total Year	Cabin Creek Gas Company	Consolidated	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Eliminations	Consolidated
GROSS EARNINGS	$1,209,610.93	$1,826,832.00 X4	$ 4,388.80	$3,032,087.05	$21,243.28	$3,053,300.33	$2,964,044.10	$49,816.42	$ -	$3,013,860.53
OPERATING EXPENSES AND ORDINARY TAXES:										
Direct Expenses-										
Labor - Teaming	$ 51,004.87	$ 105,362.28	$ -	$ 156,367.15	$ 2,457.06	$ 158,824.21	$ 167,287.46	$ 6,892.37	$ -	$ 174,179.83
Fuel	20,347.98	44,761.21	-	65,108.99	-	65,108.99	61,880.14	-	-	61,880.14
Mineral Seal Oil	11,582.42	15,154.91	-	26,736.33	158.87	26,894.20	26,620.26	86.22	-	26,706.48
Repairs - Labor	11,319.90	17,439.73	-	28,759.63	90.63	28,850.26	21,125.19	629.50	-	21,754.69
Repairs - Material	9,186.56	6,879.90	-	16,066.46	20.37	16,086.83	15,933.03	383.70	-	16,316.73
Other Supplies	5,354.90	11,820.10	-	17,175.00	357.40	17,532.40	19,182.49	616.68	-	19,799.17
Freight on Gasoline	-	-	-	-	-	-	341,394.65	6,001.37	-	347,396.02
Royalty	48,335.86	197,684.01	X195,532.85	50,457.02	-	50,457.02	371,377.85	6,196.53	X367,941.70	9,631.68
Rent and Interest	7,602.78	13,703.07	-	21,305.85	-	21,305.85	23,103.26	-	-	23,103.26
Insurance	4,130.79	8,574.51	-	12,705.30	146.20	12,851.50	10,751.16	308.06	-	11,059.22
Use of Gas	11,075.66	17,840.42	-	28,916.28	-	28,916.28	24,031.69	-	-	24,031.69
Total Direct Expenses	$ 179,942.42	$ 439,190.14	X$195,532.85	$ 423,600.01	$ 3,227.52	$ 426,827.54	$1,082,677.18	$21,118.43	X$367,941.70	$ 735,848.91
General Expenses	5,609.49	39,539.58	-	45,145.07	1,162.43	46,307.50	67,880.15	2,757.27	-	70,637.42
Total Above Expense Items	$ 185,547.91	$ 478,729.72	X$195,532.85	$ 468,745.08	$ 4,389.96	$ 473,135.04	$1,150,557.33	$23,870.70	X$367,941.70	$ 806,486.33
Taxes (Other than Income and Excess Profits Taxes)	24,678.11	5,218.94	-	29,897.05	-	29,897.05	40,537.29	-	-	40,537.29
Total Operating Expenses and Taxes	$ 210,226.02	$ 483,948.66	X$195,532.85	$ 498,642.13	$ 4,389.96	$ 503,032.09	$1,191,094.62	$23,870.70	X$367,941.70	$ 847,023.62
Net Earnings before Federal Taxes, Depletion and Depreciation	$ 999,384.91	$1,342,883.34	$191,144.67	$2,533,414.92	$16,853.32	$2,550,268.24	$1,772,949.48	$25,945.72	$367,941.70	$2,166,836.91

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UNITED FUEL GAS COMPANY AND SUBSIDIARIES

DISTRIBUTION OF GAS REVENUES AND SALES IN M. CU. FT. BY

RETAIL DISTRICTS AND WHOLESALE CONSUMERS

FOR THE YEARS ENDED DECEMBER 31, 1928 AND 1923

Particulars	Year Ended December 31, 1928			Year Ended December 31, 1923		
	M. Cu. Ft.	Revenue in Cents Per M. Cu. Ft.	Amount	M. Cu. Ft.	Revenue in Cents Per M. Cu. Ft.	Amount
RETAIL SALES:						
City Sales West Virginia Division-						
City of Charleston-						
Domestic	2,898,913	20.18	$ 824,628.83	2,917,068	20.38	$ 894,420.00
Industrial	2,627,331	17.18	450,587.72	2,862,668	18.04	516,499.16
Total City of Charleston	5,226,244	18.66	$ 975,216.25	5,779,733	19.22	$1,110,919.16
City of Huntington-						
Domestic	1,412,083	21.32	$ 301,099.38	1,630,181	21.38	$ 350,424.63
Industrial	468,371	20.22	94,723.11	973,995	20.18	196,523.63
Total City of Huntington	1,880,424	21.08	$ 395,822.49	2,613,146	20.93	$ 546,948.26
City of Williamson-						
Domestic	234,242	28.48	$ 66,688.28	284,909	28.40	$ 72,370.94
Industrial	79,724	15.78	12,580.44	86,373	15.94	9,306.45
Total City of Williamson	313,966	23.00	$ 72,208.69	343,282	23.79	$ 81,677.39
City of Spencer-						
Domestic	193,188	22.12	$ 42,728.28	199,004	22.17	$ 44,120.28
Industrial	13,871	21.68	3,036.88	13,388	22.12	2,953.90
Total City of Spencer	207,036	22.11	$ 45,763.83	212,380	22.17	$ 47,074.18
Sundry West Virginia Towns-						
Domestic	650,348	23.21	$ 152,907.01	771,812	23.67	$ 181,809.29
Industrial	1,010,720	19.70	199,097.64	873,216	20.58	179,673.93
Total Sundry W. Va. Towns	1,661,068	21.19	$ 352,004.65	1,644,728	22.17	$ 361,483.22
Total City Sales, West Virginia Division-						
Domestic	5,068,708	21.24	$1,081,048.42	5,811,644	21.39	$1,243,148.14
Industrial	4,200,017	18.10	759,964.49	4,781,604	18.93	904,957.07
Total City Sales West Virginia Division	9,268,725	19.82	$1,841,012.91	10,593,248	20.27	$2,148,102.21
OTHER RETAIL SALES:						
Ohio Division	2,192,886	30.19	$ 661,989.46	1,888,684	34.94	$ 644,648.58
Kentucky Division	1,389,993	31.83	498,067.90	1,978,718	31.06	613,614.78
Rural Districts	1,234,822	28.76	355,030.29	1,904,840	28.78	486,772.38
Field Operations	887,182	10.00	88,718.82	706,831	10.00	70,683.18
Total Other Retail Sales	5,804,183	28.13	$1,870,773.17	6,836,040	28.92	$1,687,718.80
Total Retail Sales	14,972,918	22.94	$3,411,786.08	16,429,288	23.38	$3,836,818.01

Particulars	Year Ended December 31, 1922			Year Ended December 31, 1923		
	M. Cu. Ft.	Revenue in Cents Per M. Cu. Ft.	Amount	M. Cu. Ft.	Revenue in Cents Per M. Cu. Ft.	Amount
WHOLESALE SALES:						
Columbia Gas and Electric Company	9,412,164	7.40	$ 696,376.83	9,735,968	7.50	$ 734,196.34
Ohio Fuel Supply Company	7,841,268	7.00	548,890.44	7,829,208	7.00	547,904.36
Central Kentucky Natural Gas Company	1,801,323	19.35	360,246.58	1,535,853	20.00	307,116.60
Louisville Gas & Electric Company	2,270,388	14.71	334,703.98	1,027,321	21.88	224,742.10
Portsmouth Gas Company	1,191,212	30.00	357,363.60	1,277,742	30.00	383,322.60
Hope Natural Gas Company	3,841,636	15.88	596,304.68	4,416,703	19.52	862,386.64
Pittsburgh and West Virginia Natural Gas Company	5,772,484	16.83	954,348.70	4,038,135	19.37	785,860.34
Montgomery Gas Company	97,605	12.00	11,712.60	139,614	12.00	16,753.68
Bow Hill Consumers Gas Company	3,004	25.00	751.00	6,819	25.00	1,704.80
No. W. Virginia Oil and Gas Company				1,082	20.00	216.40
Industrial Gas Company	63,342	20.08	12,708.40			
Total Wholesale	31,994,865	11.86	$3,795,303.78	30,066,171	12.85	$3,863,003.55
T o t a l	46,867,511	15.38	$7,207,089.83	46,498,480	16.86	$7,698,821.86

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAIL OF PLANT AND PROPERTY BY SYSTEMS AND STATES - GAS DEPT.

AS OF DECEMBER 31, 1923

Line No.	Particulars	West Virginia				Kentucky and Ohio			
		Production	Transmission	Distribution	Total	Production	Transmission	Distribution	
1	Pipe Line	$ 1,479,745.24	2,934,621.83	470,157.61	4,884,524.68	75,582.35	744,101.42	180,782.93	1,00
2	Well Pipe	1,306,977.97	-	-	1,306,977.97	54,943.59	-	-	
3	Well Equipment	3,648,762.02	-	-	3,648,762.02	139,245.99	-	-	12
4	Operated Acreage	2,005,555.23	-	-	2,005,555.23	3,641.91	-	-	
5	Unoperated Acreage	4,884,608.61	-	-	4,884,608.61	38,910.53	-	-	
6	Right of Way	38,467.31	56,951.54	1,898.36	97,317.21	1,730.20	20,205.10	566.00	
7	Right of Way Expense	42,382.07	56,332.32	3,429.12	102,143.51	5,139.11	13,181.55	756.32	
8	Buildings	65,956.03	140,331.99	104,788.51	311,075.53	3,108.86	7,642.06	6,657.77	
9	Fittings	82,792.60	41,493.63	38,161.72	162,449.18	4,571.47	18,147.02	14,837.01	
10	Other Line Equipment	49,051.68	35,821.95	17,432.21	102,305.81	1,629.88	6,478.11	6,024.96	
11	Labor, Teaming and Freight	980,412.71	1,859,668.60	328,094.82	3,168,176.13	44,761.21	380,376.86	112,137.23	92
12	Regulators	1,827.58	1,796.89	17,788.41	21,422.88	-	1,647.20	7,182.43	
13	Telephone and Telegraph Lines	-	101,182.10	-	101,182.10	-	10,742.66	-	
14	Office Furniture	3,490.52	588.00	32,934.89	37,013.41	119.20	-	5,156.51	
15	Tools Over $25.00	6,647.48	646.92	7,368.98	14,663.38	49.00	-	2,504.99	
16	Meters	10,602.48	9,269.43	333,433.31	353,305.22	864.61	2,113.26	143,846.87	14
17	Compressor Stations	48,475.35	2,735,005.79	-	2,783,481.14	-	104,960.48	-	12
18	Measuring Stations	50,947.59	33,484.99	15,516.67	99,949.25	1,985.14	4,920.34	11,560.65	1
19	Service Lines	-	-	242,947.26	242,947.26	-	-	87,616.46	
20	Autos, Horses and Wagons	21,543.32	1,725.20	13,505.35	36,773.87	-	-	1,744.65	
21	Drilling Tools	67,821.05	-	-	67,821.05	3,804.40	-	-	
22	Cost of Financing	-	-	-	-	-	-	-	
23	Cleaning Out Tools	50,391.82	-	-	50,391.82	-	-	-	
24	Depreciation and Adjustment	689,796.43	X-227.52	887.09	690,456.00	65,618.65	27.49	529.04	
25									
26									
27									
28	Total Plant, Property, Etc.	$15,336,266.06	8,008,698.86	1,628,311.33	24,973,272.25	446,110.07	1,314,743.52	581,576.62	2,3
29									
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/ES)DIARIES

ATES - GAS DEPARTMENT

and Ohio			Total					Line
Distribution	Total	General and Miscellaneous	Production	Transmission	Distribution	General and Miscellaneous	Total	No.
160,782.93	1,000,467.70	-	1,656,327.69	3,678,722.25	650,941.54	-	5,984,992.38	1
-	54,943.59	-	1,361,921.56	-	-	-	1,361,921.56	2
-	139,245.99	-	3,788,008.01	-	-	-	3,788,008.01	3
-	3,841.91	-	2,009,395.14	-	-	-	2,009,395.14	4
-	38,916.83	-	4,723,825.14	-	-	-	4,723,825.14	5
866.00	22,501.30	-	40,197.61	77,156.64	3,464.36	-	119,818.61	6
756.32	19,076.98	-	47,521.18	69,513.87	4,186.44	-	121,221.49	7
6,657.77	17,606.69	-	69,066.89	146,174.05	111,443.28	-	326,684.22	8
14,837.01	37,558.80	-	87,365.07	59,640.85	52,998.73	-	200,004.65	9
6,024.96	14,332.92	-	50,881.80	42,800.06	23,457.17	-	116,038.73	10
112,137.23	537,275.30	-	1,028,172.92	2,840,045.46	440,252.08	-	3,708,451.43	11
7,182.43	8,799.83	-	1,837.56	3,444.09	24,940.64	-	30,222.61	12
-	10,742.66	-	-	111,924.76	-	-	111,924.76	13
5,156.51	5,277.71	365.80	3,609.72	365.00	38,093.40	365.80	42,696.92	14
2,804.99	2,853.99	-	6,696.48	348.92	9,873.97	-	17,219.37	15
143,846.87	146,824.74	-	11,467.09	11,362.69	476,980.18	-	499,829.96	16
-	104,960.45	-	48,476.35	2,839,966.24	-	-	2,888,441.59	17
11,860.65	18,464.13	-	55,349.77	36,086.29	27,077.32	-	118,413.38	18
87,616.46	87,616.46	-	-	-	330,563.74	-	330,563.74	19
1,744.65	1,744.65	-	21,843.32	1,725.20	15,250.00	-	38,818.52	20
-	3,804.40	-	71,625.45	-	-	-	71,625.45	21
-	-	195,727.58	-	-	-	195,727.58	195,727.58	22
-	-	-	50,291.82	-	-	-	50,291.82	23
829.04	66,175.18	-	785,415.08	(200.03	1,386.13	-	786,601.18	24
								25
								26
								27
581,576.62	2,342,430.41	196,093.38	18,784,695.17	9,321,120.34	2,309,888.18	196,093.38	27,811,797.04	28
								29
								30

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAILS OF GAS PURCHASES

FOR THE YEARS ENDED DECEMBER 31, 1932, AND 1933

Participants	Year Ended December 31, 1932			Year Ended December 31, 1933		
	M. Cubic Feet	Rate per M. Cubic Feet in Cents	Amount	M. Cubic Feet	Rate per M. Cubic Feet in Cents	Amount
UNITED FUEL GAS COMPANY:						
Anderson Oil and Gas Company	82,984	5.00	$ 4,199.20	64,348	5.00	$ 3,217.28
Belvard Oil and Gas Company	238,693	5.00	11,784.65	206,489	5.00	10,324.45
Blackshire Oil and Gas Company	160,441	7.00	11,230.87	148,383	7.45	11,046.72
W. E. R. Byrne	32,257	2.25	725.83	25,656	2.25	577.35
Cabin Creek Gas Company	1,316,667	3.50	46,083.36	1,008,761	3.50	35,325.97
Carter Oil Company	104,754	3.25	3,439.73	79,954	3.22	2,571.01
Cassis and Kemp	27,417	5.00	1,370.86	17,857	5.00	892.85
Central Wayne Oil and Gas Company	97,855	5.00	4,892.75	96,390	5.00	4,819.50
Charleston and Clendenin Oil and Gas Company	118,632	6.24	7,403.39	122,163	7.00	8,551.41
Columbian Carbon Company	27,092	4.00	1,083.68	20,719	4.00	828.76
Clendenin Gasoline Station	57,138	4.00	2,288.52	-	-	-
Davis, L. G.	-	-	-	370,179	6.41	23,738.10
East Lynn Oil and Gas Company	57,583	5.00	2,879.18	48,117	5.00	2,405.85
Empire Petroleum Company	897,258	4.89	43,896.35	744,344	5.00	37,227.20
Elkins, Richard	893,383	7.56	67,821.36	819,198	8.48	69,231.34
Falling Rock Cannell Coal Company	619,238	8.50	52,635.26	985,757	8.50	83,789.37
Frazier, J. E.	449,256	5.00	22,262.90	425,084	8.48	35,147.44
Gascoal Oil Company	352,298	5.00	10,668.94	339,507	5.00	16,186.21
J. O. Jackson Company	298,144	3.00	8,854.32	234,769	3.00	7,043.07
Kanawha City Oil and Gas Company	725,829	8.00	57,906.32	807,282	8.08	65,862.36
Koontz and Osborne #116	2,641	5.00	132.05	-	-	-
Latty Oil and Gas Company	201,946	4.52	9,122.46	-	-	-
Meteor Carbon Company	167,093	5.00	8,354.65	137,276	5.00	6,863.80
Murphy, John	41,333	4.82	1,992.26	19,179	6.00	1,150.74
McCormick, William	45,382	6.00	2,734.92	47,251	6.40	3,024.45
McCray, D. D.	4,101	4.07	167.00	2,583	5.00	129.65
Ohio Fuel Oil Company	937,685	5.32	49,889.83	999,186	7.08	69,940.92
O'Connell Oil Company #4	143,467	5.00	7,173.42	-	-	-
O'Connell Oil Company #91	261,922	5.00	13,096.14	87,896	5.38	4,740.06
Pilgrim Oil Company	79,202	6.00	4,752.12	42,626	6.00	2,557.56
Priddie Oil and Gas Company	77,537	5.00	3,876.85	76,808	5.00	3,840.40
Rogers, A. M.	4,981	5.00	249.05	5,072	5.00	253.60
Shelton Gasoline Company	147,448	5.00	7,372.40	318,886	5.00	15,944.30
Smiley and Shaff	142,715	5.00	7,135.75	106,633	5.00	5,331.65
Allman, Peter	75,738	4.30	3,258.51	59,503	4.48	2,664.95
South Penn Oil Company	527,116	3.31	17,447.56	166,080	3.68	6,110.35
Stonewall Oil and Gas Company	68,280	5.00	3,412.50	83,134	5.00	2,657.70

Particulars	Year Ended December 31, 1922			Year Ended December 31, 1923		
	M. Cubic Feet	Rate per M. Cubic Feet In Cents	Amount	M. Cubic Feet	Rate per M. Cubic Feet In Cents	Amount
UNITED FUEL GAS COMPANY (Continued):						
Pennsylvania Oil and Gas Company	495,950	6.28	$ 31,130.66	494,870	7.64	$ 37,791.90
Turley, C. J.	89,082	4.00	3,562.08	46,400	4.00	1,856.01
Union Gas and Oil Company	464,296	6.36	29,546.78	198,503	6.34	12,584.57
Virginian Gas and Oil Company	-	-	-	1,896	5.00	94.80
Williamson and Carnes	303,768	4.81	14,609.09	208,272	5.63	11,553.79
Warfield Natural Gas Company	-	-	-	667,294	18.57	127,621.64
Walker Oil Company #4	-	-	-	29,391	7.00	2,057.38
Waldron, M. M.	104,126	3.00	3,123.78	114,999	3.00	3,449.97
Waldsmith, Carl J.	80,827	6.00	4,849.62	68,666	6.00	4,119.96
Welsh and Lemon	7,748	6.00	464.76	6,202	6.00	372.12
Western Oil and Gas Company	200,183	7.00	14,012.81	200,886	7.00	14,059.85
Barnhart and Taylor	-	-	-	185,317	7.00	12,972.19
Davis and Davis (Camp Creek)	-	-	-	11,629	10.00	1,162.90
Davis and Davis (H. Samples)	-	-	-	10,892	10.00	1,089.20
Davis and Davenport	-	-	-	11,797	10.00	1,179.70
Miller, Jeff et al.	-	-	-	20,764	7.00	1,453.48
Goshorn, Craig Oil Company	-	-	-	18,247	10.00	1,824.70
Richard Hikins #181	-	-	-	58,086	7.00	4,206.46
Total United Fuel Gas Company	11,220,802	5.37	$602,493.76	10,856,089	6.92	$751,145.36
WARFIELD NATURAL GAS COMPANY:						
Murphy, John	-	-	$ -	19,768	6.00	$ 1,186.80
Pilgrim Oil Company	-	-	-	15,370	6.00	922.20
Union Gas and Oil Company	-	-	-	474,584	6.73	31,956.04
United Fuel Gas Company	-	-	-	1,163,756	30.00	349,126.80
Total Warfield Natural Gas Company	-	-	-	1,673,478	22.96	$383,192.94
Total Purchases	11,220,802	5.37	$602,493.76	12,529,564	9.96	$1,134,338.30
Less- Inter-Company Purchases	1,316,667	3.50	$ 46,083.38	3,659,811	26.61	$973,074.61
Total Consolidated Purchases	9,904,136	5.62	$556,410.38	9,669,753	6.46	$161,263.69

1852

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DISTRIBUTION AND COMMERCIAL EXPENSES BY DISTRICTS

FOR THE YEAR ENDED DECEMBER 31,1952

Particulars	City of Charleston	City of Huntington	City of Williamson	Other West Virginia	Total West Virginia	Ohio and Kentucky Districts	Total Distribution Expenses
DISTRIBUTION:							
Operation-							
Superintendence	$ 883.72	$ 624.80	$ 248.02	$ 898.91	$ 2,355.15	$ 1,930.48	$ 4,285.63
Operating Lines	10,993.08	2,888.04	329.75	8,131.23	19,042.13	6,463.94	25,506.08
Connecting and Disconnecting Meters	9,666.34	3,938.38	843.25	7,668.16	21,946.13	9,722.75	31,668.88
Electrolysis	-	16.29	-	-	16.29	-	16.29
Shop Expense	2,048.28	2,367.36	181.81	984.22	5,581.67	2,640.03	8,143.50
Miscellaneous	1,601.94	786.58	15.87	200.43	2,603.81	498.57	2,902.38
Total Operation	$24,693.36	$10,340.17	$ 1,588.70	$14,274.94	$ 50,966.97	$21,256.79	$ 72,122.76
Maintenance							
Charging Construction	$ 9,469.63	$ 3,819.68	$ 87.80	$ 2,883.38	$ 16,960.19	$ 9,211.51	$ 26,171.70
Lines and Regulators	2,180.49	2,833.89	414.88	4,237.22	9,386.39	11,384.52	20,770.91
Meter and House Regulators	7,992.49	4,667.16	404.96	2,949.64	16-014.25	7,274.46	23,288.71
Services	4,113.68	2,890.97	370.89	1,622.81	8,999.94	8,840.08	17,840.03
Total Maintenance	$23,756.29	$13,211.71	$ 1,278.23	$11,413.05	$ 50,360.78	$36,710.57	$ 87,071.35
Total Distribution	$48,451.65	$24,251.36	$ 2,836.93	$25,687.79	$101,227.75	$57,966.36	$ 159,194.11
COMMERCIAL:							
Reading Meters	$ 5,695.45	$ 3,629.01	$ 387.07	$ 3,636.45	$ 13,347.98	$ 6,879.75	$ 21,227.73
Salaries of Office Force and Collectors	20,367.33	14,874.21	3,686.84	18,183.94	59,111.02	23,390.55	82,501.57
Rent, Heat, Light, Telephone	2,527.01	1,941.43	121.07	1,433.31	6,222.82	3,536.17	9,758.99
Stationery and Supplies	1,790.46	2,156.85	113.52	1,486.78	5,547.61	2,031.18	7,578.79
Miscellaneous	25.91	35.52	17.95	36.47	115.80	87.31	203.11
Total Commercial	$30,406.16	$24,637.02	$ 4,325.15	$24,966.90	$ 84,316.23	$36,924.96	$ 121,240.19
Total Distribution and Commercial	$78,857.81	$48,888.40	$ 7,162.08	$51,654.69	$187,543.98	$93,891.32	$ 281,434.30

1953

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

SUMMARY STATEMENT OF DISTRIBUTION SYSTEM

AS OF DECEMBER 31, 1923

Particulars	Charleston	Huntington	Spencer	Total West Virginia	Ohio	Kentucky	Total Ohio and Kentucky	Total
Pipe Line	$312,953.87	$238,034.91	$19,169.43	$ 470,157.61	$ 87,325.88	$ 93,456.06	$180,783.93	$ 650,941.54
Rights of Way	1,136.90	635.21	106.25	1,898.36	184.00	382.00	566.00	2,464.36
Right of Way Expense	1,108.88	2,294.66	96.16	3,429.12	352.72	403.60	756.32	4,185.44
Buildings	84,810.72	19,333.38	641.41	104,785.51	2,374.65	4,283.12	6,657.77	111,443.28
Fittings	19,032.34	17,863.10	1,266.26	38,161.72	6,008.63	8,630.16	14,637.01	52,998.73
Other Material	10,209.68	6,097.85	1,124.68	17,432.21	2,390.81	3,634.45	6,024.96	23,457.17
Labor, Teaming and Freight	158,612.58	153,864.67	15,617.87	328,094.82	51,675.37	60,461.86	112,137.23	440,232.05
Gas Receivers and Regulators	9,673.02	6,681.00	1,464.30	17,788.41	3,223.08	3,929.35	7,152.43	24,940.84
Office Furniture	27,922.76	4,706.63	805.50	33,934.89	2,034.96	3,123.55	5,158.51	38,093.40
Tools over $25.00	5,640.63	1,118.27	610.06	7,368.98	1,219.57	1,283.42	2,504.99	9,873.97
Meters	164,735.15	155,531.20	13,169.96	333,433.31	65,792.56	77,784.31	143,576.87	476,980.18
Pitot Tube Measuring Stations	10,933.29	4,583.36	-	15,516.67	7,467.63	4,093.62	11,560.65	27,077.32
Service Lines	124,569.42	109,587.68	8,759.96	242,947.28	45,591.11	45,025.35	87,616.46	330,563.74
Horses, Wagons and Automobiles	9,930.35	3,575.00	-	13,505.35	601.63	943.02	1,744.65	15,250.00
Depreciation and Adjustment	370.27	388.52	98.33	857.09	525.08	3.96	529.04	1,386.13
Total Distribution System	$841,685.70	$723,695.75	$62,929.68	$1,628,311.33	$273,965.58	$307,611.24	$581,576.82	$2,209,888.15

1854

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAIL OF CHARLESTON DIVISION DISTRIBUTION SYSTEM

AS OF DECEMBER 31, 1923

Particulars	Charleston Distribution System								Total Charleston Distribution System
	City of Charleston	Louden District	Charleston District	Elk District	South Charleston	Kanawha City	Total	Sundry Districts	
...e Line	$143,813.76	$12,883.48	$18,845.61	$ 94.39	$16,004.90	$ 5,792.03	$197,134.17	$ 15,819.10	$212,953.27
...ts of Way	603.75	36.15	226.00	23.25	-	20.00	909.15	247.75	1,156.90
...ts of Way Expense	675.31	43.25	102.30	60.75	-	7.43	889.04	219.24	1,108.28
...ildings	7,034.32	116.83	212.33	795.77	249.94	109.01	8,508.20	76,302.52	84,810.72
...tings	13,788.30	975.00	905.65	167.52	767.43	489.80	17,093.70	1,938.66	19,032.36
...er Material	8,943.94	271.30	70.47	243.13	1,247.42	371.82	8,148.08	2,061.60	10,209.68
...er, Teaming and Freight	114,409.89	14,454.29	3,509.41	843.74	1,936.77	4,072.87	139,226.97	19,385.61	158,612.58
...Receivers and Regulators	4,277.44	346.12	767.33	394.28	1,276.86	339.37	7,401.40	2,271.62	9,673.02
...ice Furniture	2,165.14	-	-	28.94	-	-	2,194.08	25,728.68	27,922.76
...ls Over $50.00	5,394.40	-	-	-	-	-	5,394.40	246.25	5,640.65
...ers	123,880.10	5,284.44	5,233.53	177.61	7,856.26	3,171.32	144,983.16	19,748.99	164,732.15
...t Tubes Measuring Stations	882.07	2,247.40	1,714.74	-	862.11	-	5,706.32	5,226.97	10,933.29
...vice Lines	103,139.41	2,060.42	2,330.60	21.17	7,262.04	1,210.74	118,024.38	6,575.04	124,599.42
...ses, Wagons and Automobiles	9,910.35	-	-	-	-	-	9,910.35	20.00	9,930.35
...reciation and Adjustment	-	-	-	-	-	-	-	370.27	370.27
T o t a l	$537,298.18	$38,718.69	$33,917.97	$2,840.45	$37,163.73	$15,584.39	$665,523.40	$176,162.30	$841,685.70

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAIL OF HUNTINGTON DIVISION DISTRIBUTION SYSTEM

AS OF DECEMBER 31, 1923

Particulars	Huntington Distribution System								
	City of Huntington Cabell Co.	Guyandotte District	City of Huntington Wayne Co. (Geneva)	Grant and Barboursville	Total Huntington	City of Williamson	Total	Sundry Districts	Total Huntington
Pipe Line	$169,228.57	$ 4,000.60	$17,972.09	$ -	$191,198.26	$11,800.13	$202,998.39	$ 35,036.52	$238,034.91
Rights of way	156.50	2.00	-	-	158.50	94.50	253.00	382.21	635.21
Rights of way Expense	1,301.11	-	-	-	1,301.11	156.60	1,457.71	766.95	2,224.66
Buildings	11,279.32	221.71	30.44	-	11,531.47	6,793.90	18,305.37	1,028.01	19,333.38
Fittings	13,282.62	300.61	172.14	-	13,755.37	675.76	14,431.13	3,431.97	17,863.10
Other Material	3,368.07	182.85	109.56	-	3,657.88	631.28	4,288.86	1,808.99	6,097.85
Labor, Teaming and Freight	103,099.76	3,789.86	6,330.67	6.87	113,406.88	10,988.72	123,995.60	29,869.07	153,364.67
Gas Receivers and Regulators	2,901.50	421.93	183.13	-	3,506.56	874.00	4,380.56	2,270.53	6,651.09
Office Furniture	3,718.24	-	-	-	3,718.24	326.16	4,044.40	162.23	4,206.63
Tools over $50.00	850.86	-	-	-	850.86	-	850.86	267.41	1,118.27
Meters	97,477.18	2,568.86	4,474.38	114.46	104,634.51	18,342.91	122,977.42	32,553.78	155,531.20
Pitot Tubes Measuring Stations	3,278.75	-	-	-	3,278.75	-	3,278.75	1,304.63	4,583.38
Service Lines	80,412.61	1,488.14	2,585.86	49.65	84,497.66	7,775.95	92,273.61	17,314.27	109,587.88
Horses, Wagons and Automobiles	3,575.00	-	-	-	3,575.00	-	3,575.00	-	3,575.00
Depreciation and Adjustment	-	-	-	-	-	-	-	386.52	386.52
Total	$493,824.09	$13,899.94	$32,085.74	$170.98	$539,050.75	$58,059.31	$597,110.66	$126,585.09	$723,695.75

JIRGAL EXHIBIT NO. 6

ITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

ET ON ADJUSTED GAS INVESTMENT, NET EARNINGS,

DEPRECIATION AND OPERATING PROFIT

PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1925

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

ADJUSTED STATEMENT OF PLANT AND PROPERTY - GAS DEPARTMENT

Period	Additions Per Books	Adjustments: *Incomplete Construction	Adjustments: Labor Cost Of Drilling New Wells	Adjustments: Unoperated Oil Acreage	Adjustments: Financing Improvements and Betterments	Adjustments: Depreciation and Adjustment	Adjustments: Total Adjustments	Additions As Adjusted	Balance At End Of Year
Six Months Ended December 31-									
1 9 0 9	$ 148,888.82	$6,227,829.35	$ 9,387.96	X$511,256.17	$ -	$ -	$7,725,931.16	$7,874,819.98	$ 7,874,819.98
Year Ended December 31-									
1 9 1 0	9,739,750.89	X4,617,112.05	347,866.95	-	-	-	X4,269,245.10	5,470,205.79	13,345,025.77
1 9 1 1	3,042,313.03	X3,981,025.64	493,426.79	-	-	-	X2,787,598.87	254,714.16	13,599,739.93
1 9 1 2	489,504.72	111,448.65	149,439.93	-	-	-	260,888.58	750,393.30	14,350,133.23
1 9 1 3	1,013,810.13	72,782.35	418,009.95	-	-	-	490,792.30	1,504,602.43	15,854,435.66
1 9 1 4	861,424.92	72,983.97	345,762.23	-	-	-	418,746.20	1,280,171.12	17,134,606.78
1 9 1 5	660,480.50	X516,771.40	-	-	-	-	X516,771.40	143,709.10	17,278,315.88
1 9 1 6	1,874,276.25	298,743.17	-	-	X118,449.56	X266,453.93	X86,160.32	1,788,115.93	19,066,431.81
1 9 1 7	4,031,125.28	303,706.46	X1,763,363.83	X117,047.66	X74,973.88	X489,880.09	X2,141,759.00	1,909,366.28	20,975,798.09
1 9 1 8	652,792.16	9,872.92	-	-	-	267.16	9,605.76	662,397.92	21,638,196.01
1 9 1 9	819,486.99	X280,638.01	-	-	X1,250.00	-	X281,905.01	537,561.98	22,175,757.99
1 9 2 0	1,520,864.05	120,876.43	-	-	-	-	120,876.43	1,645,740.48	23,821,498.47
1 9 2 1	1,152,846.81	X375,875.99	-	-	-	-	X375,875.99	776,970.82	24,598,469.29
1 9 2 2	397,609.08	84,973.32	-	238,713.22	-	-	303,686.54	701,295.62	25,299,764.91
1 9 2 3	1,082,943.41	X92,742.35	-	-	X1,054.14	-	X93,796.49	989,146.92	26,288,911.83
	$27,511,797.04	$ 119,034.16	-	X$389,390.61	X$195,727.58	X$756,601.18	X$1,222,585.21	$26,288,911.83	

* Included with Gas Department Property cost in its entirety, although some part properly chargeable to Gasoline and Oil Departments.

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1858

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT OF ADJUSTED NET EARNINGS BEFORE DEPLETION, DEPRECIATION AND FEDERAL INCOME TAXES - GAS DEPARTMENT

FOR THE PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1923

Period	Per Books	Adjustments: Adjustment of Revenues from Parent Companies	Cost of Drilling New Wells	Abandoned Leases charged to Expense	Production Expenses chargeable to Oil Department	General Expenses apportioned to other Departments	Profit and Loss Adjustments	One-Half Gasoline Net Earnings	Property Taxes apportioned to other Departments	Total Adjustments	Total as Adjusted
Six months Ended December 31, 1909	$ 170,568.68	-	9,387.96	108,883.00	12,054.24	4,409.69	X18,966.60	-	1,812.88	117,551.19	288,119.87
Year Ended December 31-											
1 9 1 0	345,800.50	-	347,866.98	415,436.55	58,904.01	5,866.41	X52,055.44	-	2,181.18	767,899.87	1,113,700.37
1 9 1 1	389,291.65	-	493,426.79	43,516.55	59,138.06	4,148.86	13,912.77	-	2,118.89	616,250.44	905,842.09
1 9 1 2	1,249,603.01	-	149,439.93	21,243.53	59,844.44	14,663.96	14,918.75	-	5,293.13	265,123.74	1,514,726.75
1 9 1 3	881,088.59	-	418,009.98	128,576.55	66,768.66	18,247.00	108,551.19	-	8,539.95	748,695.32	1,629,783.89
1 9 1 4	862,161.06	-	348,768.23	91,632.10	69,226.66	9,818.67	35,202.78	-	7,366.84	549,009.30	1,411,170.36
1 9 1 5	1,388,299.43	-	-	-	73,257.58	9,663.33	X22,640.22	-	9,688.90	69,959.59	1,388,249.01
1 9 1 6	2,389,948.36	-	-	-	73,700.93	18,632.13	170,411.46	127,676.13	15,921.26	406,341.91	2,796,290.21
1 9 1 7	4,748,086.75	-	-	-	75,232.46	47,134.28	X17,079.66	662,446.81	23,106.55	790,840.13	5,538,926.88
1 9 1 8	4,349,076.14	334,843.48	-	-	74,662.11	50,180.97	X80,029.99	791,519.38	37,362.76	1,188,536.70	5,537,615.44
1 9 1 9	5,669,028.90	897,183.78	-	-	81,008.13	50,283.29	X8,534.67	1,103,637.71	52,028.40	1,878,553.44	5,243,579.34
1 9 2 0	4,172,210.45	1,343,636.13	-	-	91,844.10	63,390.78	X97,800.97	1,320,293.00	71,755.34	2,733,118.31	6,905,328.76
1 9 2 1	3,078,401.96	988,685.14	-	-	98,670.84	82,166.46	49,850.78	999,567.22	85,152.86	2,232,113.29	5,310,515.25
1 9 2 2	•3,926,165.49	1,397,956.51	-	-	89,488.91	-	32,038.67	1,101,705.72	6,882.67	2,630,001.48	6,556,166.97
1 9 2 3	4,307,719.78	1,498,496.69	-	-	88,039.31	-	98,387.19	934,393.41	7,207.43	2,617,424.03	6,925,143.78
	$38,717,436.36	$ 6,711,453.69	1,763,543.63	809,310.08	1,064,872.48	348,595.01	233,655.81	7,041,259.08	358,712.76	17,311,420.74	53,028,856.94

•After allocating General Expenses and Taxes between departments for first four months of year.

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1859

MIDLAND FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING AVERAGE INVESTMENT

BEFORE AND AFTER ALLOWING FOR ACCRUED DEPRECIATION AND DEPLETION

FOR THE PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1923

Period	(1) Book Cost of Property at End of Year	(2) Average Investment for Year	(3) Working Capital at 4%	(4) Total Average Investment before Allowing for Accrued Depreciation and Depletion	(5) Accrued Depreciation and Depletion	(6) Cumulative Retirements	(7) Balance in Depreciation and Depletion Reserves	(8) Average Balance in Reserves	(9) Average Investment after Allowing for Accrued Depreciation and Depletion
Six Months Ended December 31, 1909	$ 7,674,619.98	$ 3,937,609.99	$ 157,496.40	$ 4,094,986.39	$ 55,151.30		$ 55,151.30	$ 27,575.65	$ 4,067,330.74
Year Ended December 31-									
1 9 1 0	13,348,085.77	10,609,902.88	424,396.91	11,034,299.79	848,885.61	$ 148,351.61	397,234.20	226,192.75	10,808,107.04
1 9 1 1	13,599,739.93	13,473,912.85	538,995.29	14,011,877.67	1,095,994.75	×536,386.16	559,608.59	478,421.39	13,532,856.28
1 9 1 2	14,350,133.23	13,974,936.58	558,997.46	14,533,934.04	1,717,086.45	×604,564.86	1,112,521.57	836,065.08	13,697,868.96
1 9 1 3	15,654,438.64	15,102,284.45	604,091.38	15,706,375.83	2,416,772.60	×636,697.20	1,780,075.40	1,446,298.48	14,260,087.35
1 9 1 4	17,134,606.78	16,494,521.22	659,780.85	17,154,302.07	3,199,121.11	×803,077.88	2,396,043.23	2,088,059.32	15,066,242.75
1 9 1 5	17,278,315.88	17,206,461.33	688,258.45	17,894,719.78	5,998,744.88	×918,965.80	3,077,679.38	2,736,861.30	15,157,858.48
1 9 1 6	19,066,431.81	18,172,373.85	726,894.98	18,899,268.80	4,999,489.16	×1,200,746.38	5,798,703.78	3,438,191.58	15,461,077.22
1 9 1 7	20,975,798.09	20,021,114.95	800,844.61	20,821,959.86	6,198,050.62	×1,690,893.63	4,501,165.99	4,149,934.89	16,672,024.67
1 9 1 8	21,636,196.01	21,306,997.05	852,279.88	22,159,276.93	7,408,488.18	×1,948,898.03	5,459,564.15	4,980,375.07	17,178,901.86
1 9 1 9	22,175,757.99	21,906,977.00	876,279.08	22,783,256.08	8,616,180.24	×2,140,605.86	6,475,841.88	5,962,862.87	16,820,693.21
1 9 2 0	23,621,495.47	22,998,626.23	919,945.13	23,918,863.36	9,913,383.61	×2,308,880.33	7,604,003.28	7,040,272.38	16,878,290.98
1 9 2 1	24,396,469.29	24,209,983.88	968,399.36	25,178,383.24	11,197,493.02	×2,668,185.48	8,845,307.54	8,075,155.41	17,103,227.83
1 9 2 2	25,299,784.91	24,949,117.10	997,964.68	25,947,081.78	12,849,671.85	×3,833,213.44	9,716,458.41	9,130,882.98	16,816,198.80
1 9 2 3	26,286,911.63	26,794,338.37	1,031,773.53	26,826,111.90	13,948,899.84	×3,980,222.38	10,998,677.02	10,357,567.72	16,468,544.18

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING NET EARNINGS AVAILABLE FOR RETURN ON INVESTMENT

AFTER ALLOWING FOR DEPRECIATION, DEPLETION AND INCOME TAXES

FOR THE PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1923

Period	Net Earnings before Depreciation, Depletion, and Federal Income Taxes	Depreciation and Depletion	Federal Income Taxes	Total Deductions	Earnings Available for Return on Investment
Six Months Ended December 31, 1909	$ 288,119.87	$ 55,151.30		$ 55,151.30	$ 232,968.57
Year ended December 31,-					
1910	1,113,700.37	490,434.51		490,434.51	623,265.86
1911	908,542.09	550,408.94		550,408.94	358,133.15
1912	1,514,726.75	621,091.70		621,091.70	893,635.05
1913	1,629,783.89	699,686.15		699,686.15	930,097.74
1914	1,411,170.36	782,348.51		782,348.51	628,821.85
1915	1,382,249.01	793,623.77		793,623.77	588,625.24
1916	2,796,290.21	1,006,705.28		1,006,705.28	1,789,584.93
1917	5,538,926.88	1,192,609.46	$ 242,920.00	1,435,529.46	4,103,397.42
1918	5,537,615.44	1,213,422.56	152,460.00	1,365,882.56	4,171,732.88
1919	5,293,579.34	1,210,668.06	57,630.00	1,268,298.06	4,025,281.28
1920	6,908,328.76	1,297,173.37	187,240.00	1,484,413.37	5,420,915.39
1921	5,310,518.25	1,284,169.41	63,020.00	1,347,189.41	3,963,328.84
1922	6,588,166.97	1,338,178.83	214,040.00	1,566,218.83	4,989,948.14
1923	6,928,143.78	1,399,227.49	312,346.14	1,711,573.63	5,213,570.12
Total	$83,078,888.94	$13,948,899.34	$1,289,686.14	$15,178,585.48	$67,900,303.46

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING DEVELOPMENT COST COMPUTED AT 8% ON INVESTMENT BEFORE AND AFTER ALLOWING FOR ACCRUED DEPRECIATION AND DEPLETION

FOR THE PERIOD FROM JULY 1, 1909 TO DECEMBER 31, 1923

Period	Based on Investment after Allowing for Accrued Depreciation and Depletion				Based on Investment before Allowing for Accrued Depreciation and Depletion			
	(1) Average Investment after Allowing for Accrued Depreciation and Depletion	(2) Return on Investment at 8%	(3) Earnings Available for Return	(4) Surplus or ✕Deficit	(5) Average Investment before Allowing for Accrued Depreciation and Depletion	(6) Return on Investment at 8%	(7) Earnings Available for Return	(8) Surplus or ✕Deficit
Six Months Ended December 31 1909	$ 4,067,331	$ 325,386	$ 232,969	✕$ 92,417	$ 4,094,906	$ 327,592	$ 232,969	✕$ 94,623
Year Ended December 31-								
1910	10,808,137	864,651	623,866	✕241,385	11,024,330	882,746	623,866	✕259,480
1911	13,532,856	1,082,628	355,133	✕727,495	14,011,278	1,120,902	355,133	✕765,769
1912	13,697,879	1,095,830	893,635	✕202,195	14,833,934	1,162,715	893,635	✕269,080
1913	14,260,067	1,140,807	930,098	✕210,709	15,706,376	1,256,510	930,098	✕326,412
1914	15,066,243	1,205,299	628,822	✕576,477	17,184,302	1,372,344	628,822	✕743,522
1915	15,157,856	1,212,629	558,625	✕654,004	17,894,720	1,431,578	558,625	✕872,953
1916	15,461,077	1,236,886	1,789,585	552,699	18,899,269	1,511,942	1,789,585	277,643
1917	16,672,028	1,333,762	4,103,397	2,769,635	20,821,960	1,665,757	4,103,397	2,437,640
1918	17,178,902	1,374,312	4,171,733	2,797,421	22,159,277	1,772,742	4,171,733	2,398,991
1919	18,820,693	1,345,655	✕ 4,025,281	✕ 2,679,626	22,783,256	1,822,660	✕ 4,025,281	✕ 2,202,621
1920	16,676,291	1,380,263	5,420,915	4,070,652	23,916,563	1,913,488	5,420,915	3,507,430
1921	17,103,228	1,368,258	3,963,326	2,595,068	25,178,383	2,014,271	3,963,326	1,949,055
1922	16,816,199	1,345,296	4,989,948	3,644,652	26,947,082	2,075,767	4,989,948	2,914,181
1923	16,468,544	1,317,484	5,213,570	3,896,086	26,826,112	2,146,089	5,213,570	3,067,481
Total		$17,999,146	$37,900,303	$20,901,157		$22,477,100	$37,960,303	$15,483,203

Summary-

✕Deficit from 1909 to 1918, Inclusive	✕$ 2,704,682	✕$ 3,331,839
✕Surplus from 1919 to 1923, Inclusive	✕ 23,005,839	✕ 18,754,942
Net Surplus as above	$20,901,157	$15,423,203

(✕ Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

AND

VIRGINIAN GASOLINE AND OIL COMPANY

COMPARISON OF BALANCE SHEETS AT DECEMBER 31, 1910 AND 1923

ASSETS	December 31 1910	December 31 1923	Increase or ×Decrease
PROPERTY, PLANT, RIGHTS, FRANCHISES, ETC.:			
Acquired through Purchase or Construction	$13,499,357.01	$32,544,989.36	$19,045,632.35
Added through Appraisal of Acreage	-	41,524,226.47	41,524,226.47
	$13,499,357.01	$74,069,215.83	$60,569,858.82
INVESTMENTS:			
Securities Owned	$ 76,701.00	$ 188,452.44	$ 111,751.44
Sinking Fund Investments	-	1,209,296.75	1,209,296.75
Reacquired Securities	-	103,053.00	103,053.00
	$ 76,701.00	$ 1,500,802.19	$ 1,424,101.19
MINERAL RIGHTS:			
Prepaid Insurance	$ -	$ 86,284.05	$ 86,284.05
Prepaid Rentals	-	150,000.00	150,000.00
Prepaid Taxes	-	14,972.87	14,972.87
	$ -	$ 251,256.92	$ 251,256.92
CURRENT ASSETS:			
Cash	$66, 66,906.14	$ 1,5?,823.77	$ 4,460,917.63
Notes Receivable	456.15	15,206.95	14,752.80
Accounts Receivable	275,234.95	1,665,063.65	1,389,128.70
Material and Supplies	117,104.56	414,298.84	297,194.28
	$ 460,401.80	$ 2,672,397.21	$ 3,161,990.41
	$14,036,464.81	$79,413,672.15	$65,377,207.34

LIABILITIES	December 31 1910	December 31 1923	Increase or ×Decrease
CAPITAL STOCK:	$ 6,000,000.00	$30,890,200.00	$24,890,200.00
FUNDED DEBT:			
Debenture Bonds	$ 4,392,072.90	$ -	×$ 4,392,072.90
First Mortgage Bonds	-	10,921,000.00	10,921,000.00
Underlying Bonds	2,707,500.00	-	×2,707,500.00
	$ 7,099,572.90	$10,921,000.00	$ 3,821,427.10
CURRENT LIABILITIES:			
Accounts Payable	$ 337,556.15	$ 276,578.19	×$ 60,979.96
Notes Payable	650,000.00	-	×650,000.00
Accrued Taxes	-	707,595.48	707,595.48
Accrued Interest	9,827.99	16,653.31	6,825.32
Security Deposits	13,310.94	129,235.00	115,924.06
Unclaimed Accounts	-	9,281.36	9,281.36
	$ 1,010,697.08	$ 1,139,343.34	$ 128,646.26
RESERVES:			
Depletion and Depreciation Based on Cost	$ -	$12,791,812.78	$12,791,812.78
Depletion of Capital Surplus	-	11,154,113.09	11,154,113.09
Contingent Reserve	-	35,723.93	35,723.93
	$ -	$23,981,649.80	$23,981,649.80
CAPITAL SURPLUS:			
Created by Appraisal of Acreage	$ -	$41,524,226.47	$41,524,226.47
Created by Appraisal of Properties Purchased	-	47,382.80	47,382.80
Less-			
Depletion of Capital Surplus	-	×11,154,113.09	×11,154,113.09
Stock Dividends	-	×20,890,200.00	×20,890,200.00
	$ -	$ 9,527,296.18	$ 9,527,296.18
EARNED SURPLUS:			
Appropriated for Sinking Fund Purposes	$ -	$ 1,747,480.63	$ 1,747,480.63
Unappropriated	×73,805.17	1,206,702.00	1,280,507.37
	×$ 73,805.17	$ 2,954,182.63	$ 3,027,988.00
	$14,036,464.81	$79,413,672.15	$65,377,207.34

(X Denotes red in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

AND VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF INCOME ACCOUNT - (PER BOOKS) - JULY 1, 1909 TO DECEMBER 31, 19

Line No.	Particulars	Six Months Ended December 31 1909	Year Ended December 1910	1911	1912	1913	1914	1915	1916	1917	19
(1)	GROSS EARNINGS:										
(2)	Gas Department	$[illegible],681.63	$1,747,[illegible].36	2,248,496.04	2,894,[illegible].87	2,644,004.01	$2,829,[illegible].84	2,947,176.94	4,07[illegible],220.[illegible]	6,602,829.60	6,67[illegible]
(3)	Gasoline Department	-	-	-	-	-	-	-	[illegible]70,900.17	1,918,940.48	2,[illegible]20
(4)	Oil Department	868.58	9,842.80	5[illegible],91[illegible].50	7[illegible],888.44	554,095.[illegible]4	178,278.06	142,254.85	289,201.97	666,619.95	1,[illegible]73
(5)	Carbon Black Department	-	-	-	-	-	-	-	-	-	
(6)	Tank Car Department	-	-	-	-	-	-	-	-	[illegible]24.72	[illegible]
(7)											
(8)	Total Gross Earnings	$[illegible]94,550.21	$1,757,748.16	2,299,409.84	[illegible],[illegible]28,862.01	[illegible],198,099.[illegible]	$[illegible],004,[illegible]20.90	[illegible],089,[illegible]71.79	4,7[illegible],[illegible]22.44	9,[illegible]88,414.78	10,[illegible]13
(9)											
(10)	OPERATING EXPENSES:										
(11)	Gas Department	$22[illegible],112.98	$1,402,102.86	1,956,204.[illegible]9	1,[illegible]48,[illegible]70.86	1,762,915.44	$1,967,181.76	1,664,887.82	1,68[illegible],272.00	2,054,442.85	2,[illegible]27
(12)	Gasoline Department	-	-	-	-	-	-	-	71,606.72	397,958.50	457
(13)	Oil Department	-	-	12,917.44	69,[illegible]96.12	71,18[illegible].22	41,917.80	40,[illegible]36.75	41,980.46	79,864.67	111
(14)	Carbon Black Department	-	-	-	-	-	-	-	-	-	
(15)	Tank Car Department	-	-	-	-	-	-	-	-	-	
(16)											
(17)	Total Operating Expenses	$22[illegible],112.98	$1,402,102.86	1,969,121.[illegible]8	1,414,766.68	1,834,098.66	$2,009,099.58	1,705,224.27	1,796,829.18	2,531,966.02	2,[illegible]72
(18)											
(19)	NET EARNINGS BEFORE DEPLETION, DEPRECIATION AND FEDERAL INCOME TAXES:										
(20)	Gas Department	$170,868.68	$ [illegible]45,800.50	289,291.68	1,249,60[illegible].01	881,088.57	$ 862,161.06	1,282,289.42	2,[illegible]89,948.30	4,748,086.78	4,[illegible]61
(21)	Gasoline Department	-	-	-	-	-	-	-	299,29[illegible].48	1,520,981.98	1,[illegible]87
(22)	Oil Department	868.58	9,842.80	40,996.06	664,492.32	482,916.[illegible]3	1[illegible],360.26	101,918.10	247,251.81	587,088.28	1,[illegible]60
(23)	Carbon Black Department	-	-	-	-	-	-	-	-	-	
(24)	Tank Car Department	-	-	-	-	-	-	-	-	[illegible]24.72	[illegible]
(25)											
(26)	Total Net Earnings before Depletion, Depreciation and Federal Income Taxes	$171,[illegible]37.26	$ [illegible]88,[illegible]43.[illegible]0	[illegible]40,287.71	1,914,098.[illegible]	1,[illegible]64,[illegible]00.69	$ 99[illegible],8[illegible]1.[illegible]2	1,[illegible]84,207.82	2,[illegible]76,[illegible]93.26	6,856,448.78	7,[illegible]25
(27)											
(28)	PROFIT AND LOSS SUSPENSE ADJUSTMENTS	X18,966.60	X68,477.97	X[illegible],866.[illegible]	12,006.01	14,1[illegible]9.[illegible]	22,852.76	X22,642.42	[illegible]9,736.25	X60,816.29	X[illegible]
(29)											
(30)	Total Above	$152,[illegible]70.66	$ 290,[illegible]65.[illegible]	298,721.[illegible]8	1,926,[illegible]01.[illegible]4	1,[illegible]76,200.66	$1,[illegible]16,[illegible]74.10	1,[illegible]61,868.10	2,976,249.81	6,795,[illegible]92.80	7,[illegible]8
(31)											
(32)	NON-OPERATING INCOME:										
(33)	Interest	$ -	$ 7,971.70	1,[illegible]78.40	1,[illegible]00.91	11,[illegible]00.76	$ 6,[illegible]86.97	[illegible],[illegible]10.28	17,671.45	12,[illegible]89.64	[illegible]
(34)	Rents	-	-	-	1,806.80	1,601.50	277.00	117.50	[illegible]5[illegible].28	484.00	
(35)	Miscellaneous	[illegible]82.00	[illegible]92.00	[illegible]08.58	-	[illegible]20.61	444.45	782.50	941.64	-	
(36)	Profit and Loss Suspense Adjustments	-	X47,[illegible]98.[illegible]	64,[illegible]61.70	7,067.20	97,121.74	1,[illegible]54.75	2,[illegible]89.70	-	-	
(37)											
(38)	Total Non Operating Income	$ [illegible]82.00	$ [illegible]8,[illegible]94.[illegible]	65,[illegible]42.[illegible]	10,474.61	110,[illegible]44.[illegible]	$ 8,[illegible]61.17	6,[illegible]69.98	19,[illegible]06.[illegible]4	[illegible][illegible],[illegible]73.64	[illegible]
(39)											
(40)	Total Gross Income	$[illegible]52,[illegible]52.66	$ 251,[illegible]70.40	[illegible]64,[illegible]64.06	1,[illegible]36,[illegible]73.[illegible]	1,[illegible]66,[illegible]44.67	$1,[illegible]47,[illegible]75.27	1,[illegible]68,[illegible]35.08	2,[illegible]95,[illegible]15.[illegible]	6,809,006.14	7,[illegible]2
(41)											
(42)	DEDUCTIONS FROM GROSS INCOME:										
(43)	Bond Interest	$ [illegible]7,000.00	$ [illegible]83,[illegible]81.07	419,[illegible]44.[illegible]	414,[illegible]65.[illegible]	408,[illegible]89.11	$ [illegible]96,[illegible]49.[illegible]	[illegible]80,[illegible]19.[illegible]	455,[illegible]76.99	[illegible]98,[illegible]42.67	[illegible]
(44)	General Interest	-	[illegible]8,[illegible]78.[illegible]	[illegible]6,[illegible]57.61	[illegible]3,[illegible]54.01	40,[illegible]49.56	48,[illegible]16.[illegible]	[illegible]0,[illegible]73.[illegible]	18,[illegible]89.61	[illegible],[illegible]08.47	[illegible]
(45)	Sinking Fund Appropriations	-	-	-	-	-	-	-	-	-	
(46)											
(47)	Total Deductions	$ [illegible]7,000.00	$ [illegible]81,[illegible]59.62	476,[illegible]01.97	448,[illegible]19.84	449,[illegible]76.67	$ [illegible]47,[illegible]56.08	[illegible]70,[illegible]92.[illegible]	474,[illegible]68.60	[illegible]07,[illegible]51.14	[illegible]
(48)											
(49)	Surplus Net Income before Depletion, Depreciation and Federal Income Taxes	$ [illegible]8,[illegible]52.66	$ [illegible]70,[illegible]89.22	[illegible]11,[illegible]97.91	1,[illegible]88,[illegible]56.41	1,[illegible]79,[illegible]06.[illegible]0	$ [illegible]61,[illegible]79.19	[illegible]97,[illegible]42.[illegible]	2,[illegible]20,[illegible]47.28	6,[illegible]01,[illegible]55.00	6,[illegible]

(X Denotes red in copy.)

AND SUBSIDIARIES

OIL COMPANY

LY 1, 1909 TO DECEMBER 31, 1923

Ended December 31

1916	1917	1918	1919	1920	1921	1922	1923	Total	Line No.
									(1)
77,220.10	6,002,829.60	6,676,501.16	6,723,488.94	7,547,019.92	6,779,267.72	7,228,489.01	7,730,176.40	68,149,285.04	(2)
70,900.17	1,918,940.48	2,720,701.77	2,894,409.78	3,614,510.10	2,756,084.14	3,057,900.53	3,019,880.89	19,942,706.90	(3)
89,401.97	666,619.95	1,171,694.06	1,300,117.81	1,257,022.65	880,648.91	805,541.74	417,774.81	6,044,696.75	(4)
-	-	-	81,699.26	126,774.67	76,794.79	176,657.92	145,426.96	867,707.60	(5)
-	324.72	49,156.61	74,724.70	74,170.64	48,049.49	88,717.78	81,340.70	779,147.76	(6)
									(7)
37,522.44	9,588,614.75	10,611,991.80	10,874,700.49	12,593,497.94	9,807,676.19	10,982,905.98	11,788,579.40	97,055,326.85	(8)
									(9)
									(10)
81,272.00	3,084,442.85	2,747,424.42	2,858,460.04	3,734,809.47	3,700,665.36	3,902,927.52	3,422,456.68	32,425,829.84	(11)
71,806.72	997,956.50	697,566.40	784,476.28	845,875.19	656,708.71	805,052.09	847,027.62	6,655,909.11	(12)
41,950.46	79,564.67	111,191.59	186,777.78	221,417.45	145,692.90	187,749.84	149,576.47	1,289,184.07	(13)
-	-	-	19,954.94	24,876.72	21,584.96	28,905.17	16,642.24	110,984.23	(14)
-	-	-	8,942.80	16,151.77	13,624.99	12,608.40	29,186.00	80,714.92	(15)
									(16)
96,829.18	2,891,966.08	2,875,824.41	3,248,547.44	4,155,088.84	3,918,676.82	4,011,917.22	4,466,885.01	37,840,541.17	(17)
									(18)
									(19)
									(20)
89,948.30	4,748,086.78	4,749,076.74	5,665,025.90	4,172,210.48	5,078,401.96	5,926,168.49	4,707,719.72	38,717,476.20	(21)
98,297.48	1,840,981.98	1,869,493.97	2,309,977.10	3,076,674.91	2,299,775.85	2,850,268.24	2,166,836.91	16,306,797.74	(22)
47,251.81	567,088.28	1,290,800.47	1,147,784.19	1,091,609.20	648,154.01	776,191.80	866,190.34	6,725,734.68	(23)
-	-	-	61,976.34	101,896.15	54,809.47	110,954.25	126,764.72	456,382.17	(24)
-	324.72	49,156.61	68,491.50	56,015.69	71,218.44	46,108.95	58,154.70	896,472.84	(25)
									(26)
76,497.26	8,856,448.76	7,856,167.79	7,445,772.98	8,442,789.40	8,886,939.67	8,971,688.78	8,941,694.79	59,514,787.88	(27)
									(28)
93,736.25	460,316.27	86,129.06	17,712.50	6,129.62	87,676.12	29,486.74	18,486.43	97,401.89	(29)
									(30)
76,249.51	8,795,954.50	7,450,041.85	7,459,085.45	8,477,279.78	8,972,648.79	7,001,175.50	8,907,427.96	59,421,185.99	(31)
									(32)
									(33)
17,871.43	12,589.64	26,909.75	34,691.61	41,156.16	38,484.61	44,884.04	46,754.47	294,568.37	(34)
654.43	484.00	1,587.00	1,540.56	2,014.70	2,686.19	294.92	187.88	20,209.58	(35)
941.64	-	1,850.11	1,540.01	785.48	459.40	2,106.24	4,504.19	17,881.68	(36)
-	-	-	-	-	-	-	-	128,494.46	(37)
									(38)
19,466.74	13,073.64	30,346.86	37,752.18	43,956.34	40,296.80	47,081.20	51,046.52	454,141.09	(39)
									(40)
995,813.88	8,809,006.14	7,480,751.99	7,496,037.63	8,466,165.71	8,014,954.29	7,048,256.70	8,954,470.48	59,878,817.08	(41)
									(42)
									(43)
455,378.99	396,642.67	545,440.00	626,687.50	626,840.00	684,070.00	748,955.67	597,781.88	7,740,495.69	(44)
16,989.61	8,606.47	21,278.87	2,775.98	1,529.98	4,967.84	10,816.41	21,788.05	478,541.62	(45)
-	-	-	-	-	478,586.15	781,858.68	680,274.80	1,907,699.51	(46)
									(47)
474,368.60	405,251.14	566,718.87	629,463.48	628,369.98	1,167,619.97	1,541,630.76	1,279,424.47	9,667,776.82	(48)
									(49)
									(50)
540,967.28	8,201,755.00	6,914,033.12	6,866,404.75	7,855,671.73	6,849,712.32	5,809,648.54	8,678,046.08	50,211,760.26	(51)
									(52)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

AND VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF SURPLUS ACCOUNT FROM DATE OF ORGANIZATION (JULY 1, 1909)

Line No.	Particulars	Six Months Ended December 31 1909	Year Ended December 1910	1911	1912	1913	1914	1915	1916	1917	
(1)	EARNED SURPLUS:										
(2)	Balance at Beginning of Period	$ -	$ 95,854.66	$ 77,808.17	$ 187,741.08	1,508,782.97	$2,994,490.97	$ 3,250,467.47	1,167,454.04	1,746,150.63	2,0
(3)	Add-										
(4)	Credit Adjustments	-	-	-	-	-	-	-	-	-	
(5)	Surplus Net Income	95,854.66	170,189.22	111,933.91	1,488,156.41	1,079,402.20	770,000.00	-	180,355.21	1,764,564.69	
(6)							567,979.19	937,942.19	2,540,947.25	6,201,755.00	6,0
(7)	Balance	$95,854.66	$ 94,336.88	$188,141.08	1,996,418.99	2,588,185.16	$3,488,469.56	4,187,809.66	$ 3,888,856.50	9,711,669.40	8,0
(8)											
(9)											
(10)	Deduct-										
(11)	Debit Adjustments	$ -	$ -	-	-	-	$ -	-	2,976.92	-	
(12)	Dividends-										
(13)	Cash	-	-	-	-	-	-	-	-	-	
(14)	Stock	-	-	-	-	-	-	1,000,000.00	1,070,000.00	1,600,000.00	1,0
(15)	Federal Income Taxes	-	-	-	-	-	-	-	-	1,000,000.00	
(16)	Depreciation and Adjustment	-	99,468.61	27,402.00	24,662.97	10,648.79	77,804.19	20,358.82	19,226.95	1,555,610.54	
(17)	Provision for Depletion and Depreciation	-	-	-	-	-	-	-	-	-	
(18)		-	-	-	-	-	-	-	-	1,459,908.99	1,0
(19)	Total Deductions	$ -	$ 99,468.61	$ 27,402.00	24,662.97	10,648.79	$ 77,804.19	1,020,358.82	2,092,203.87	7,615,518.67	6,0
(20)											
(21)											
(22)	Balance at End of Period	$95,854.66	$ 94,336.88	$ 77,809.17	187,741.08	1,508,782.97	$3,488,469.56	3,250,467.47	1,167,454.04	1,746,150.63	2,0
(23)											
(24)											
(25)	CAPITAL SURPLUS BY APPRAISAL:										
(26)	Balance at Beginning of Period	$ -	$ -	-	-	-	$ -	-	-	-	
(27)	Credits through Appraisal of Property	-	-	-	-	-	-	-	-	-	40,7
(28)	Stock Dividend	-	-	-	-	-	-	-	-	-	
(29)	Depletion	-	-	-	-	-	-	-	-	-	X 2,1
(30)											
(31)											
(32)	Balance at End of Period	$ -	$ -	-	-	-	$ -	-	-	-	38,6

(X Denotes red in copy.)

[illegible]

[illegible] COMPANY

[illegible]IFICATION (JULY 1, 1909)

Ended December 31

1916	1917	1918	1919	1920	1921	1922	1923	Summary	Line No.
456.04	1,748,450.87	2,099,150.59	2,410,857.54	2,791,156.18	2,577,255.28	1,[illegible]96.86	694,897.75	-	1
2
155.21	1,787,567.67	994.78	90.98	-	149,085.60	-	495,047.67	4,748,226.19	4
947.25	6,201,755.00	6,899,898.16	6,842,464.72	7,855,641.33	4,869,[illegible]12.[illegible]	5,009,645.54	5,[illegible]3,046.08	50,411,780.26	5
6
558.50	9,711,669.46	8,999,181.53	9,253,053.28	10,646,977.91	7,571,[illegible]29.13	6,[illegible]54,540.40	6,684,671.67	55,940,000.45	7
8
9
976.92	-	1,980.61	-	50,071.95	87,849.18	59,187.85	270,265.42	478,[illegible]93.13	10
000.00	1,[illegible]00,000.00	1,[illegible]00,000.00	1,[illegible]00,875.00	4,[illegible]97,400.00	1,814,[illegible]45.[illegible]	1,[illegible]50,0[illegible]0.00	1,000,000.00	16,[illegible]84,900.00	11
-	1,[illegible]00,000.00	-	-	-	-	-	-	-	12
-	1,835,810.54	990,600.01	549,[illegible]07.18	98[illegible],[illegible]95.07	179,178.20	[illegible]97,654.80	[illegible]18,951.26	4,000,000.00	13
228.95	-	249,[illegible]65.00	186,857.[illegible]	104,144.97	208,608.71	149,[illegible]07.98	98,681.10	4,954,884.94	14
-	1,639,900.[illegible]	1,677,[illegible]36.79	1,809,981.16	2,070,7[illegible]1.84	2,[illegible]66,465.16	1,967,764.41	1,[illegible]84,051.67	1,247,[illegible]87.24	15
16
405.87	7,819,310.87	8,509,564.01	8,491,897.07	8,075,722.87	6,841,728.88	5,[illegible]7,944.85	5,497,909.47	14,[illegible]90,000.94	17
18
19
[illegible]50.87	8,099,150.59	8,440,557.54	8,791,155.18	8,877,255.28	1,322,696.86	694,897.75	1,206,700.20	1,206,700.20	20
21
22
23
-	-	-	38,604,017.[illegible]	[illegible]8,458,800.[illegible]	14,[illegible]1[illegible],[illegible]6.[illegible]	1[illegible],[illegible]6[illegible],740.48	11,278,[illegible]40.[illegible]	-	24
-	-	40,749,[illegible]26.47	-	-	-	[illegible]84,[illegible]6[illegible].80	-	-41,871,609.[illegible]	25
-	-	[illegible]2,149,[illegible]19.[illegible]	[illegible]2,149,[illegible]19.[illegible]	[illegible]20,[illegible]00,000.00	-	[illegible]190,[illegible]00.00	-	[illegible]40,590,[illegible]00.00	26
-	-	[illegible]2,149,[illegible]19.[illegible]	[illegible]2,149,[illegible]19.[illegible]	-2,148,[illegible]31.[illegible]	[illegible]1,849,[illegible]40.[illegible]	[illegible]1,719,[illegible]4[illegible].[illegible]	[illegible]1,781,044.[illegible]	[illegible]11,184,[illegible]17.09	27
28
-	-	38,604,[illegible]1[illegible].[illegible]	[illegible]8,458,800.[illegible]	14,[illegible]1[illegible],[illegible]6.[illegible]	1[illegible],[illegible]6[illegible],740.48	11,278,[illegible]40.[illegible]	9,[illegible]7,[illegible]98.18	9,[illegible]7,[illegible]98.18	29
30

UNITED FUEL GAS COMPANY, INC., AND SUBSIDIARIES

DETAILED STATEMENT OF EXPENSES - GAS DEPARTMENT

PER BOOKS - JULY 1, 1909 - DECEMBER 31, 1923

Line No.	Particulars	Six Months Ended December 31 1909	Year Ended December 1910	1911	1912	1913	1914	1915	1916	1917	1918
(1)	OPERATING EXPENSES AND ORDINARY TAXES:										
(2)	Gas Purchased	$ 12,012.68	81,080.71	130,902.01	147,435.61	170,801.15	253,959.58	316,793.24	338,118.71	374,431.67	374,082.26
(3)											
(4)	Production Expenses-										
(5)	Operation-										
(6)	Superintendence	$ 2,270.36	2,990.61	2,318.23	1,410.35	330.35	288.74	-	361.90	8,600.83	9,821.14
(7)	Operating Wells and Lines	8,306.46	89,241.85	96,243.90	97,350.60	96,088.68	106,690.73	77,820.18	84,702.08	85,325.68	103,274.95
(8)	Production Tools and Supplies	827.62	4,829.11	6,879.74	7,498.07	5,863.99	5,480.65	5,968.16	5,608.65	8,801.12	9,917.60
(9)	Field Measuring Stations	-	-	-	-	-	-	-	5,867.80	7,962.33	12,710.42
(10)	Leasehold Expenses	-	-	-	-	-	-	-	34,852.90	37,400.86	49,028.72
(11)	Rentals on Unoperated Leases	86,303.61	396,283.45	396,688.78	384,746.84	440,847.54	475,047.54	516,926.04	514,968.61	541,310.60	526,095.28
(12)	Well Royalties	4,325.00	31,647.31	54,990.55	56,820.87	66,115.59	77,952.33	91,061.82	104,299.37	137,616.16	172,812.01
(13)	Cancelled and Surrendered Leases	64.72	111,326.67	419,092.50	46,109.56	64,578.61	127,736.87	86,841.10	3,017.64	1,999.96	3,878.78
(14)	Miscellaneous and Insurance	-	-	-	-	-	-	-	3,887.03	38,480.74	14,610.98
(15)	Cost of Obtaining Leases	12,421.50	56,824.37	56,180.79	73,287.32	73,357.69	59,465.40	47,598.91	19,141.76	-	-
(16)	Drilling Tools and Tearing Expense	-	8,084.44	24,323.66	6,516.05	3,970.96	12,824.62	418,180.38	-	-	-
(17)											
(18)	Total Operation	$108,519.09	781,227.81	1,030,676.89	689,783.66	716,352.17	864,379.89	805,088.67	751,472.49	864,497.68	901,084.80
(19)											
(20)	Maintenance-										
(21)	Changing Construction	$ -	-	-	-	-	-	-	3,064.87	2,910.07	2,465.14
(22)	Repairs to Wells	1,124.99	36,503.11	48,691.93	45,969.75	39,091.75	57,549.02	43,070.39	18,395.48	39,737.13	48,386.24
(23)	Repairs to Field Lines	-	-	-	-	-	-	-	19,187.45	34,330.97	44,270.36
(24)	Field Measuring Stations	-	-	-	-	-	-	-	1,102.67	1,861.06	2,905.14
(25)	Drilling New Wells	10,277.03	344,669.90	476,738.54	134,148.58	401,915.89	525,083.48	-	-	-	-
(26)											
(27)	Total Maintenance	$ 11,402.02	380,973.01	525,430.47	180,118.33	441,007.64	582,634.50	43,070.39	43,750.47	78,827.23	99,026.90
(28)											
(29)	Total Production Expense	$122,921.11	1,162,200.82	1,556,107.36	869,871.99	1,157,359.81	1,446,814.39	851,159.06	795,222.96	943,324.91	1,000,081.70
(30)											
(31)	Transmission-										
(32)	Operation-										
(33)	Superintendence	$ 375.09	222.24	168.24	-	30.00	-	-	97.25	2,882.47	4,382.36
(34)	Transmission Lines	3,284.92	12,510.16	27,447.20	32,481.78	28,553.32	28,187.01	29,728.61	29,315.47	31,207.14	39,978.81
(35)	Transmission Tools and Supplies	21.74	336.52	477.10	819.67	840.64	1,645.01	939.60	1,623.53	3,000.18	2,379.33
(36)	Compressing Stations	-	-	-	-	-	20,327.22	24,732.19	42,069.83	74,474.96	144,957.83
(37)	Measuring Stations	50.00	1,205.10	2,870.76	1,022.22	6,742.18	8,968.90	9,591.44	5,007.89	5,309.05	6,347.21
(38)	Miscellaneous and Insurance	15.68	91.18	45.09	995.23	900.66	614.72	668.23	1,086.30	1,277.23	1,972.37
(39)											
(40)	Total Operation	$ 4,047.43	14,347.22	30,708.52	35,318.90	37,197.65	59,739.86	66,657.07	79,202.27	118,169.00	199,997.99
(41)											
(42)	Maintenance-										
(43)	Changing Construction	$ 427.04	5,437.88	6,045.92	1,707.84	1,621.43	348.97	9,893.73	1,667.15	1,250.33	1,128.07
(44)	Transmission Lines	1,566.14	14,349.97	16,797.58	22,825.61	20,824.06	37,123.75	23,904.83	20,373.02	30,718.84	50,815.99
(45)	Compressing Stations	-	-	-	-	-	4,823.40	4,046.73	7,898.07	19,593.93	37,886.57
(46)	Measuring Stations	-	108.63	811.88	184.36	871.68	885.78	655.10	110.63	1,151.94	1,201.85
(47)											
(48)	Total Maintenance	$ 1,993.18	19,896.48	23,655.38	24,728.01	23,316.14	42,981.87	38,500.39	30,048.87	52,714.74	90,728.18
(49)											
(50)	Total Transmission	$ 6,040.61	34,238.70	54,363.70	60,054.91	60,513.79	102,721.73	104,157.46	109,251.14	170,873.74	290,726.09
(51)											

(X Denotes red in copy.)

...e COMPANY, INC., AND SUBSIDIARIES

...MENT OF EXPENSES - GAS DEPARTMENT

JULY 1, 1909 - DECEMBER 31, 1949

1 9 1 6	1 9 1 7	1 9 1 8	1 9 1 9	1 9 2 0	1 9 2 1	1 9 2 2	1 9 2 3	T o t a l	Line No.
									(1)
3,110.71	374,431.67	374,062.26	380,216.39	387,774.58	444,300.13	556,410.38	619,263.69	4,691,582.76	(2)
									(3)
									(4)
									(5)
361.90	8,600.53	9,321.14	11,982.70	13,370.25	14,306.26	13,136.05	7,384.15	85,604.47	(6)
2,703.08	85,325.58	103,274.95	109,956.82	142,466.51	121,296.78	117,511.66	114,104.21	1,425,184.73	(7)
1,606.65	8,801.12	9,917.60	8,677.19	10,427.96	7,755.48	9,726.97	9,601.44	106,150.75	(8)
1,387.50	7,962.33	14,710.44	13,034.40	16,227.98	16,456.00	17,173.46	17,485.91	106,607.86	(9)
1,382.90	37,400.86	49,048.78	49,355.58	50,589.69	48,319.34	46,756.59	43,701.98	367,955.33	(10)
1,948.61	341,310.60	520,196.22	575,807.57	646,287.33	664,533.37	661,158.98	628,535.49	7,483,093.89	(11)
4,499.37	137,614.16	174,812.01	170,359.57	176,768.64	177,810.53	181,771.94	196,456.76	1,691,459.63	(12)
1,017.64	1,999.96	3,578.78	1,377.53	641.50	2,078.96	1,548.93	253.62	829,557.46	(13)
7,667.03	58,460.74	14,810.90	101,149.58	56,891.57	78,147.68	29,428.27	50,145.82	389,593.58	(14)
2,141.78	-	-	-	-	-	-	-	400,277.62	(15)
-	-	-	-	-	-	-	-	12,911.58	(16)
									(17)
1,478.49	664,497.66	901,054.60	1,039,919.73	1,160,716.17	1,135,006.16	1,089,467.51	1,100,304.15	12,048,582.67	(18)
									(19)
									(20)
3,264.97	8,910.07	8,465.14	9,035.60	14,671.91	7,009.82	13,183.71	9,473.13	80,240.85	(21)
2,340.46	39,737.13	49,386.24	61,991.22	98,438.66	120,954.57	142,797.26	121,504.50	914,698.24	(22)
2,137.43	34,330.97	44,270.58	37,413.60	31,338.70	27,890.93	29,168.99	24,167.33	229,549.51	(23)
1,104.67	1,841.06	2,905.14	2,835.49	3,538.55	4,264.06	3,904.42	4,262.76	34,646.05	(24)
-	-	-	-	-	-	-	-	1,690,853.42	(25)
									(26)
3,750.47	78,827.35	99,026.90	117,276.11	149,988.66	159,944.56	149,481.54	179,287.72	2,919,945.37	(27)
									(28)
2,222.96	943,324.91	1,000,081.70	1,156,769.64	1,296,662.41	1,294,951.14	1,306,736.85	1,287,872.47	15,768,328.04	(29)
									(30)
									(31)
									(32)
97.23	2,882.67	4,382.36	4,147.30	4,535.45	4,760.60	4,914.23	4,673.49	31,310.46	(33)
3,315.47	31,207.14	39,976.01	37,102.89	41,266.08	36,000.31	32,107.13	32,703.22	440,153.40	(34)
1,623.53	3,006.15	2,376.33	1,780.82	3,529.27	4,733.58	1,772.94	2,078.21	28,866.21	(35)
3,069.83	74,474.96	144,967.80	203,341.83	301,797.56	309,715.32	350,010.43	381,691.70	1,853,965.22	(36)
2,007.89	9,309.05	6,347.21	7,310.36	8,698.09	8,665.58	8,957.49	9,619.69	90,092.99	(37)
2,088.30	1,277.23	1,972.37	3,416.95	9,758.76	1,455.90	1,542.71	9,400.06	32,950.79	(38)
									(39)
9,802.27	118,159.00	199,997.90	257,120.00	369,585.35	367,151.97	400,154.61	440,965.42	2,479,338.87	(40)
									(41)
									(42)
2,667.15	1,850.32	1,126.07	8,012.33	13,089.41	5,377.74	5,352.68	8,719.90	68,927.42	(43)
2,373.02	30,716.84	80,815.99	58,340.15	46,277.96	34,209.42	44,663.92	40,776.70	448,437.87	(44)
2,098.07	19,893.03	37,688.57	66,630.09	109,649.13	108,816.13	115,367.57	104,913.40	838,423.06	(45)
110.63	1,151.84	1,901.55	1,041.10	904.45	972.17	1,584.96	1,708.78	11,737.73	(46)
									(47)
9,048.97	82,714.74	90,728.18	112,293.87	230,700.98	147,176.43	160,117.13	159,110.78	1,164,827.03	(48)
									(49)
9,251.14	170,973.74	290,728.08	369,613.87	600,358.40	514,528.40	565,269.74	600,084.20	5,743,805.87	(50)
									(51)

...notes ref to copy.)

Line No.	Particulars	Six Months Ended December 31 1909	1910	1911	1912	1913	1914	1915	1916	1917	1918
1	OPERATING EXPENSES AND ORDINARY TAXES (Continued):										
2	Distribution-										
3	Operation-										
4	Superintendence	$ -									
5	Operating Lines	-	10,914.98	9,598.19	11,770.65	17,729.71	15,964.65	15,913.91	[illegible]	[illegible]	[illegible]
6	Connecting and Disconnecting Meters	-	15,361.09	15,505.06	16,469.69	[illegible]	94,408.91	[illegible]	[illegible]	[illegible]	[illegible]
7	Electrolysis	-	-	-	189.81	387.54	[illegible]	459.09		[illegible]	[illegible]
8	Shop Expenses	-	3,775.67	2,897.47	2,154.08	2,611.96	2,845.35	3,775.58	[illegible]	[illegible]	[illegible]
9	Miscellaneous and Insurance	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
10									[illegible]	[illegible]	[illegible]
11	Total Operation	$ -	30,044.97	27,796.66	31,583.60	35,128.18	34,784.98	31,699.58	[illegible]	[illegible]	[illegible]
12											
13	Maintenance-										
14	Changing Construction	$ -	4,514.45	5,097.58	5,847.04	15,195.17	14,180.81	7,981.58	[illegible]	[illegible]	[illegible]
15	Lines and Regulators	-	1,881.57	3,044.45	3,574.24	11,990.91	11,938.85	[illegible]	[illegible]	[illegible]	[illegible]
16	Meter and House Regulators	-	17,736.35	15,895.58	9,875.69	10,750.78	13,536.31	[illegible]	[illegible]	[illegible]	[illegible]
17	Services	-	9,869.58	8,155.17	5,915.53	666.48	198.39	904.94	[illegible]	[illegible]	[illegible]
18									[illegible]	[illegible]	[illegible]
19	Total Maintenance	$ -	33,776.45	32,979.94	25,861.81	35,195.33	39,514.54	39,306.06	[illegible]	[illegible]	[illegible]
20											
21	Total Distribution	$ -	61,838.85	55,866.59	58,845.33	85,863.59	68,962.34	71,005.71	[illegible]	[illegible]	[illegible]
22											
23	Commercial-										
24	Reading Meters	$ 3,551.12	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
25	Salaries of Office Force and Collectors	13,159.99	11,015.91	15,647.67	16,955.69	15,705.71	24,511.10	21,111.50	[illegible]	[illegible]	[illegible]
26	Rents, Heat, Light, Telephone Rentals and Tolls	2,155.15	1,641.65	2,414.47	2,007.54	2,895.66	2,795.81	1,103.81	[illegible]	[illegible]	[illegible]
27	Stationery and Supplies	1,869.91	2,177.68	1,584.99	1,555.53	1,511.01	1,149.11	1,040.89	[illegible]	[illegible]	[illegible]
28	Miscellaneous and Insurance	141.56	154.51	852.68	515.55	1,591.79	563.91	413.59	[illegible]	[illegible]	[illegible]
29	New Business	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
30									[illegible]	[illegible]	[illegible]
31	Total Commercial	$ 21,456.65	25,339.75	24,781.54	29,781.38	34,181.81	29,483.51	24,415.59	[illegible]	[illegible]	[illegible]
32											
33	General and Inter-departmental Expense-										
34	General Expense-										
35	Salaries and Expenses of General Officers	$ 6,667.74	11,498.69	11,550.54	13,172.50	17,561.53	19,811.77	21,111.89	[illegible]	[illegible]	[illegible]
36	General Office Expense	3,941.74	18,509.77	21,846.73	20,555.69	24,891.14	21,111.89	21,111.89	[illegible]	[illegible]	[illegible]
37	Private Telegraph and Telephone Lines	1,559.58	1,818.18	2,554.82	2,811.04	2,811.04	2,811.04	2,811.04	[illegible]	[illegible]	[illegible]
38	Legal Expense	6,185.13	15,055.75	25,259.58	15,519.10	6,259.58	13,111.89	5,640.13	[illegible]	[illegible]	[illegible]
39	Insurance	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
40	Damages, Judgments and General Damage Claims	35.58	580.58	253.55	5,687.78	1,583.55	1,511.89	1,111.89	[illegible]	[illegible]	[illegible]
41	Relief and Annuities	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
42	Miscellaneous	-	-	-	-	1,583.55	1,111.89	1,583.55	[illegible]	[illegible]	[illegible]
43	Outside Operations	6,586.79	8,779.58	8,385.79	28,811.18	28,583.58	28,583.58	28,583.58	[illegible]	[illegible]	[illegible]
44	Bad Debts	-	-	-	5,858.25	5,858.58	7,111.89	5,583.89	[illegible]	[illegible]	[illegible]
45	Public Regulation	-	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
46	Repairs to Buildings	1,791.11	2,588.74	1,858.58	1,588.48	1,858.79	1,588.58	2,111.74	[illegible]	[illegible]	[illegible]
47	Interest Expense	1,187.58	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]
48											
49	Total General Expense	$ 28,211.45	58,830.58	73,851.63	110,858.48	108,583.58	118,111.79	111,111.89	[illegible]	[illegible]	[illegible]

...d December 31									Line No.
...6	1917	1918	1919	1920	1921	1922	1923	Total	
									1
									2
									3
991.88	3,909.72	4,070.89	4,091.29	4,225.01	4,355.78	4,274.92	4,289.63	33,008.12	4
269.29	14,167.61	18,878.12	21,626.85	31,136.59	31,226.60	22,587.41	25,806.08	257,098.01	5
296.06	16,639.96	24,780.73	26,840.93	34,516.22	34,927.85	30,915.13	31,266.08	324,532.44	6
-	347.53	406.33	2,304.58	2,157.26	283.64	109.36	16.29	6,701.22	7
590.67	7,573.12	7,575.02	9,172.65	10,547.85	8,096.33	6,763.60	8,143.50	85,862.69	8
272.08	3,145.93	1,442.59	1,083.24	1,226.94	737.58	1,904.96	2,902.36	13,715.69	9
									10
727.36	47,783.87	57,183.68	65,258.70	83,811.87	79,596.58	66,615.60	72,122.76	730,918.97	11
									12
									13
034.93	7,084.16	4,902.87	4,261.80	7,893.99	16,015.44	28,426.09	25,171.70	156,110.31	14
886.61	6,311.86	8,756.98	11,389.69	17,177.95	10,517.39	9,916.92	20,770.91	141,607.69	15
993.18	19,263.34	15,941.64	18,160.22	23,127.29	22,901.74	21,850.76	23,288.71	236,957.73	16
924.65	4,363.89	4,894.07	5,569.15	8,812.50	10,684.81	12,602.70	17,840.03	95,169.04	17
									18
849.37	39,012.67	34,495.53	39,397.62	56,711.73	60,089.06	73,809.46	87,071.35	629,644.77	19
									20
276.75	66,796.54	91,849.31	104,656.32	140,823.60	139,665.66	139,423.06	159,194.11	1,360,760.74	21
									22
									23
206.38	10,663.54	19,097.56	21,919.01	22,860.11	22,670.14	22,679.56	22,227.73	199,976.17	24
870.18	35,849.99	45,971.13	58,844.82	67,897.62	71,314.13	74,286.68	82,901.57	595,777.10	25
250.41	6,990.30	6,662.74	6,641.33	6,976.43	8,343.74	9,351.97	9,750.99	97,617.87	26
873.04	4,572.39	4,671.53	6,821.96	7,361.78	7,275.91	6,846.50	7,548.79	84,751.62	27
9.43	9.82	14.78	-	-	-	157.23	203.11	15,239.77	28
39.89	53.67	1.26	-	-	-	-	-	94.71	29
									30
249.83	61,039.91	76,439.98	90,227.02	104,496.14	109,603.92	113,021.94	122,240.19	988,457.24	31
									32
									33
									34
264.26	61,039.63	88,619.98	90,635.32	114,483.59	119,431.27	66,148.71	78,296.23	758,643.44	35
220.08	60,551.52	64,130.76	70,915.85	86,461.63	91,467.23	67,334.43	73,868.23	773,468.14	36
393.46	14,078.64	13,710.40	14,361.70	31,985.75	30,792.27	16,388.69	20,539.66	197,680.89	37
726.55	18,763.02	31,787.31	42,244.73	61,028.00	47,455.79	40,381.41	66,662.93	428,278.88	38
227.13	12,754.11	21,140.56	32,774.95	43,994.83	39,495.26	5,356.91	8,710.29	172,474.04	39
147.36	2,474.33	10,286.07	3,562.95	266.10	36,424.76	8,703.80	3,983.90	78,647.66	40
198.69	7,069.10	25,786.00	17,096.40	6,160.11	4,040.51	10,711.63	7,984.04	88,123.23	41
886.42	80,148.37	21,236.82	42,315.71	37,036.84	51,478.93	60,882.87	65,033.10	628,496.26	42
992.69	2,860.41	4,078.91	6,573.87	11,635.98	4,778.90	5,186.46	5,763.43	63,176.31	43
823.98	997.71	2,454.18	2,386.87	1,660.98	1,588.38	781.60	596.87	11,287.03	44
46.10	2,466.68	6.62	-	6.33	-	-	-	2,827.79	45
-	-	-	-	-	-	-	-	13,797.31	46
-	-	-	-	-	-	-	-	1,157.00	47
									48
977.76	371,198.70	383,334.85	423,069.93	394,717.60	406,861.95	281,494.21	350,425.67	3,111,636.36	49
									50

1867

Line No.	Particulars	Six Months Ended December 31 1909	1910	1911	1912	1913	1914	Year Ended December 1915	1916	1917	1918
1	OPERATING EXPENSES AND ORDINARY TAXES (Continued):										
2	General and Inter-departmental Expense- (Continued)										
3	Inter-departmental-										
4	Gas Used by Company- Credit	$ -	-	-	-	-	-	-	X39,736.54	X87,619.82	X94,736.
5	Cleaning Out Tools	-	-	-	-	-	-	-	X1,860.99	X 2,967.73	X 3,84
6	Company Teaming	-	-	-	-	-	-	-	3,123.55	11,243.62	13,70
7	Rents and Repairs to Buildings	-	-	-	-	-	-	1,515.58	X3,133.49	165.69	1,56
8	Cleaning Out Tools- Oil	-	-	-	-	-	-	-	-	X3,536.68	X1,07
9	Machine and Blacksmith Shop	-	-	-	-	-	-	-	X608.17	X 739.43	4
10	Ward Water Station	-	-	-	-	-	-	-	-	-	X 46
11	Drilling Tools	-	-	-	-	-	-	-	405.79	X3,967.55	-
12											
13	Total Inter-departmental	$ -	-	-	-	-	-	1,515.58	X 40,409.88	X89,430.60	X84,18
14											
15	Total General and Inter-departmental Expense	$ 25,219.61	62,623.55	73,901.63	110,638.69	122,545.38	118,813.78	123,129.20	127,967.91	181,778.10	199,08
16											
17	Total above items	$193,393.68	1,342,992.31	1,897,782.68	1,282,406.09	1,631,934.67	1,844,808.98	1,510,112.76	1,490,287.00	1,819,141.87	2,032,03
18											
19	Taxes (Other than Income and Excess Profits Taxes)	29,719.29	59,110.56	58,441.71	82,964.47	130,980.77	122,378.80	154,774.76	192,985.00	238,300.98	295,39
20											
21	Total Operating Expenses and Ordinary Taxes	$223,112.98	1,402,102.86	1,956,204.39	1,365,370.56	1,762,915.44	1,967,181.78	1,664,887.52	1,683,272.00	2,054,442.85	2,327,42
22											
23											

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d e d D e c e m b e r 3 1									
916	1917	1918	1919	1940	1921	1922	1923	Total	Line No.
									(1)
									(2)
0,736.54	X87,619.88	X94,755.69	X189,815.54	X167,382.97	X168,766.18	X142,235.61	X 144,026.84	X974,338.89	(3)
1,860.99	X 2,967.73	X 5,860.83	400.36	X 855.43	X39.21	2,694.28	X4,448.38	X 10,026.94	(4)
3,125.55	11,243.62	13,790.79	8,495.58	7,191.92	202.80	1,881.59	2,250.87	47,880.52	(5)
8,133.49	165.69	1,867.14	1,483.28	397.69	X1,006.86	1,319.58	2,642.31	5,951.66	(6)
-	X 9,886.68	X1,078.86	X 2,048.93	16.58	X1,131.64	X786.24	-	X10,866.80	(7)
X508.17	X 739.43	40.48	1,464.09	1,293.16	642.15	112.64	1,049.19	3,384.13	(8)
-	-	X 688.66	3,360.66	2,663.73	X949.63	X 68.38	-	4,320.97	(9)
405.79	X 8,967.86	-	-	-	-	-	-	X 3,861.76	(10)
0,409.88	X89,430.80	X84,188.43	X116,668.88	X156,678.18	X171,047.97	X 137,364.34	X 142,829.88	X 936,766.81	(11)
7,947.91	181,778.10	199,051.82	306,417.41	238,042.88	236,833.98	144,099.87	207,896.12	2,174,849.57	(12)
0,287.00	1,819,141.87	2,032,030.08	2,308,120.58	2,769,885.48	2,928,703.03	2,784,943.84	2,936,380.98	28,492,844.22	(13)
2,985.00	238,300.98	268,394.37	380,539.30	384,954.02	372,182.13	377,379.68	496,108.70	3,932,985.62	(14)
									(15)
0,272.00	2,054,442.85	2,347,424.42	2,688,660.04	3,384,809.47	3,300,885.36	3,302,323.82	3,422,456.68	32,425,829.84	(16)
									(17)

(as ref in copy.)

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF PROPERTY ADDITIONS BY YEARS

FROM JULY 1, 1909 - DECEMBER 31, 1919

Line No.	Particulars	Six Months Ended Dec. 31, 1909	1910	1911	1912	1913	Year Ended December 31 1914	1915	1916	1917	1918
(1)	GAS DEPARTMENT:										
(2)	Equipment	$ 132,673.61	$4,500,599.84	$1,390,231.80	$ 447,871.28	$ 991,766.38	$950,478.11	$684,959.73	$1,614,508.05	$4,085,101.33	$ 791,396.[illegible]
(3)	Acreage Acquired	16,215.21	8,239,150.98	1,652,081.23	41,933.56	21,791.75	89,053.19	24,479.23	259,771.20	33,976.05	338,606.[illegible]
(4)											
(5)	Total	$ 148,888.82	$9,739,750.82	$3,042,313.03	$ 489,804.72	$1,013,510.13	$861,424.92	$660,480.50	$1,874,276.25	$4,051,125.28	$ 452,792.[illegible]
(6)											
(7)	Acreage Added thru Appraisal	-	-	-	-	-	-	-	-	-	32,124,303.[illegible]
(8)											
(9)	Total Gas Department	$ 148,888.82	$9,739,750.82	$3,042,313.03	$ 489,804.72	$1,013,510.13	$861,424.92	$660,480.50	$1,874,276.25	$4,051,125.28	$32,777,095.[illegible]
(10)											
(11)											
(12)	GASOLINE DEPARTMENT -										
(13)	Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ 31.86	$ 279,946.91	$ 187,698.10	$ 515,975.[illegible]
(14)											
(15)											
(16)	OIL DEPARTMENT:										
(17)	Equipment	$ -	$ -	$ -	$ 466,151.87	$ 126,923.69	$ 7,768.65	$ 54,168.31	$ 280,677.37	$ 296,980.17	$ 360,893.[illegible]
(18)	Acreage Acquired	-	-	-	-	-	-	-	-	-	-
(19)											
(20)	Total	$ -	$ -	$ -	$ 466,151.87	$ 126,923.69	$ 7,768.65	$ 54,168.31	$ 280,677.37	$ 296,980.17	$ 360,893.[illegible]
(21)											
(22)	Acreage Added thru Appraisal	-	-	-	-	-	-	-	-	-	5,624,923.[illegible]
(23)											
(24)											
(25)		$ -	$ -	$ -	$ 466,151.87	$ 126,923.69	$ 7,768.65	$ 54,168.31	$ 280,677.37	$ 296,980.17	$ 6,985,817.[illegible]
(26)											
(27)	CARBON BLACK DEPARTMENT:										
(28)	Equipment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
(29)											
(30)											
(31)	INCOMPLETE CONSTRUCTION	$8,227,829.35	$4,617,112.03	$3,281,028.66	$ 111,448.65	$ 72,782.38	$ 76,983.97	$316,771.40	$ 296,743.17	$ 300,706.46	$ 9,878.[illegible]
(32)											
(33)	Total	$8,376,718.17	$5,122,638.84	$ 436,712.63	$1,067,104.94	$1,214,216.17	$926,840.24	$197,909.27	$2,733,645.70	$4,809,510.01	$42,288,481.[illegible]

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AND SUBSIDIARIES

IL COMPANY

TIONS BY YEARS

BER 31, 1962

ded December 31									Total	Line No.
16	1917	1918	1919	1920	1921	1922	1923			
										1
808.00	$4,088,101.33	$ 791,398.18	$ 868,217.71	$1,434,709.36	$1,304,861.62	$ 888,836.74	$ 993,194.05		$20,778,876.76	2
771.80	(33,976.00)	(336,606.06)	(48,750.72)	90,074.70	(102,014.81	(90,627.66)	89,749.36		6,732,920.26	3
										4
676.20	$4,051,125.33	$ 602,792.16	$ 819,466.99	$1,524,864.06	$1,152,846.81	$ 797,609.08	$1,082,943.41		$27,511,797.04	5
										6
-	-	32,184,303.20	-	-	-	-	-		32,124,303.20	7
										8
676.20	$4,051,125.33	$32,777,095.36	$ 819,466.99	$1,524,864.06	$1,152,846.81	$ 797,609.08	$1,082,943.41		$59,636,100.24	9
										10
										11
										12
946.91	$ 187,695.10	$ 315,970.96	$ 226,991.60	$ 271,911.81	$ 84,121.84	$ 93,631.26	$ 181,991.07		$ 1,790,302.81	13
										14
										15
										16
										17
677.37	$ 296,980.17	$ 360,593.77	$ 366,681.80	$ 367,339.73	$ 174,305.03	$ 303,448.45	$ 20,298.68		$ 2,811,397.32	18
-	-	-	-	-	-	236,713.22	(185.63		238,589.09	19
										20
677.37	$ 296,980.17	$ 360,593.77	$ 366,681.80	$ 367,339.73	$ 174,305.03	$ 542,161.67	$ 20,173.05		$ 3,049,986.41	21
										22
-	-	6,624,963.27	-	-	-	775,000.00	-		9,399,923.27	23
										24
677.37	$ 296,980.17	$ 6,980,917.04	$ 366,681.80	$ 367,339.73	$ 174,305.03	$1,317,161.67	$ 20,173.05		$12,449,910.18	25
										26
										27
-	$ -	$ -	$ 113,884.02	$ 293.45	$ 248.33	$ 399.15	$ 718.49		$ 115,868.44	28
										29
										30
765.17	$ 303,706.66	$ 9,872.98	$ 880,455.01	$ 180,878.43	$ 378,878.99	$ 84,973.38	$ 92,742.38		$ 119,034.18	31
										32
665.70	$4,609,313.01	$40,288,441.28	$1,246,080.80	$2,084,690.27	$1,003,846.90	$1,872,976.20	$1,183,081.67		$74,069,218.83	33
										34

1869

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

DETAILED STATEMENT OF ADDITIONS TO PLANT AND PROPERTY - GAS DEPARTMENT

FROM JULY 1, 1909 TO DECEMBER 31, 1923

Particulars	Six Months to Dec. 31, 1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1
GAS DEPARTMENT:											
Equipment-											
Pipe Line	$ 77,167.85	2,377,425.73	697,077.52	205,398.60	410,145.80	245,633.96	75,934.29	454,143.68	536,190.61	61,556.59	
Well Pipe	3,701.12	258,611.46	140,122.41	13,619.75	88,295.78	86,779.54	60,650.38	54,753.20	230,623.72	46,219.86	
Other Equipment	250.06	20,154.54	21,087.74	✗13,770.55	4,273.15	4,979.79	612,984.41	160,854.61	1,991,705.55	19,341.37	
Rights of Way	2,003.87	47,748.78	14,415.27	2,858.56	9,835.04	6,402.77	2,455.73	6,617.73	9,034.30	2,725.82	
Right of Way Expense	995.17	19,929.38	19,296.76	5,858.67	14,749.43	8,508.40	5,791.63	9,305.19	12,398.66	4,135.14	
Buildings	584.05	20,453.18	7,380.48	15,352.96	21,423.16	14,423.44	73,356.33	413.38	20,375.42	55,146.74	
Fittings	3,380.45	72,862.07	14,837.11	8,473.68	15,571.09	5,120.62	10,197.55	6,100.12	24,012.90	6,079.19	
Other Material	2,666.14	35,870.54	12,924.26	12,609.59	12,330.92	✗1,945.96	5,007.92	7,134.97	11,403.83	2,034.86	
Labor, Teaming and Freight	26,268.67	999,381.60	438,756.33	151,744.53	245,179.93	270,906.31	83,773.73	470,998.99	439,803.53	44,864.53	
Gas Receivers and Regulators	1,043.16	14,925.85	1,370.30	586.06	2,021.91	✗2,600.64	540.87	2,457.77	737.17	2,452.89	
Telegraph and Telephone Lines	30.79	29,878.30	7,577.16	15,128.99	13,002.86	4,093.05	166.13	✗1,637.83	32,595.85	4,050.11	
Office Furniture	1,328.37	12,703.78	3,995.37	5,000.26	3,776.09	2,203.91	✗994.06	5,025.55	1,029.37	1,859.48	
Tools over $25.00	106.16	4,800.14	✗440.32	✗909.83	5,114.61	99.16	42.74	825.10	2,563.39	1,439.69	
Natural Gas Meters	12,338.90	167,998.75	14,029.89	7,511.36	21,261.51	7,513.86	✗3,707.97	17,084.93	11,800.94	29,965.80	
Boilers and Engines	450.00	5,553.69	2,884.67	✗8,888.36	-	-	-	-	-	-	
Gas Compressing Stations	-	-	-	-	-	276,117.97	73,073.74	11,306.48	149,445.40	472,709.42	$
Pitot Tube Measuring Stations	-	8,138.97	1,056.06	293.08	4,208.99	12,498.71	13,963.60	4,721.65	19,227.45	14,045.52	
Service Lines	90.68	10,956.18	310.84	1,113.93	110,461.56	10,763.63	11,459.18	14,654.04	13,459.50	15,227.81	
Horses, Wagons and Automobiles	271.15	7,846.88	523.12	6,442.30	2,418.45	2,336.38	878.88	684.89	7,372.27	252.46	
Drilling Tools	-	41,631.31	✗5,577.33	✗893.72	5,814.57	1,861.84	7,818.93	1,370.39	40,134.68	✗1,704.54	
Financing Improvements and Betterments	-	-	-	-	-	-	-	118,449.56	74,973.88	-	
Cleaning Out Tools	-	-	-	20,041.20	1,873.53	✗6,218.63	✗5,800.49	786.72	6,132.82	8,728.58	
Drilling and Use of Rigs	-	341,136.39	1,197.40	-	-	-	✗342,333.79	-	-	-	
Miscellaneous	-	2,593.24	✗2,593.24	-	-	-	-	-	-	-	
Depreciation and Adjustment	-	-	-	-	-	-	-	266,453.93	489,880.09	267.16	
Total Equipment	$132,673.61	4,500,599.94	1,390,231.80	447,571.16	991,758.38	950,478.11	684,959.73	1,614,505.05	4,085,101.83	791,398.18	
Acreage-											
Operated	$ -	144,028.45	842,499.00	✗86,181.66	192,592.70	161,595.15	179,250.16	241,575.42	238,082.89	31,261.26	
Unoperated	16,215.21	5,095,122.50	809,582.23	128,115.22	✗170,840.95	✗250,648.34	✗203,729.39	18,195.78	✗269,058.94	✗169,867.28	
Total Acreage Acquired	$ 16,215.21	5,239,150.95	1,652,081.23	41,933.56	21,751.75	✗89,053.19	✗24,479.23	259,771.20	✗33,976.05	✗138,606.02	
Total Above	$148,888.82	9,739,750.89	3,042,313.03	489,504.72	1,013,510.13	861,424.92	660,480.50	1,874,276.25	4,051,125.78	652,792.16	
Acreage Added through Appraisal	-	-	-	-	-	-	-	-	-	32,124,303.20	
Total Gas Department	$148,888.82	9,739,750.89	3,042,313.03	489,504.72	1,013,510.13	861,424.92	660,480.50	1,874,276.25	4,051,125.78	32,777,095.36	

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SUBSIDIARIES

PROPERTY - GAS DEPARTMENT

31, 1923

1917	1918	1919	1920	1921	1922	1923	Total Additions to Dec. 31, 1923
536,190.61	61,556.59	59,883.15	90,465.54	327,055.28	84,150.51	182,763.27	5,884,992.38
230,625.74	46,219.86	28,023.91	116,230.62	105,340.00	29,409.78	99,340.03	1,361,921.56
951,705.55	19,341.37	33,262.63	340,189.03	241,787.72	91,377.18	399,530.78	5,788,008.01
9,034.30	2,725.82	1,956.01	1,850.00	5,771.54	2,640.04	3,503.05	119,818.51
12,398.66	4,135.14	1,534.65	1,282.41	6,848.51	4,279.60	6,336.99	121,220.49
20,375.42	55,146.74	35,834.58	52,755.68	✗16,504.29	16,006.26	11,682.88	328,684.22
24,012.90	6,079.19	4,897.49	6,840.29	6,813.52	5,519.10	7,299.47	200,004.65
11,403.83	2,034.86	2,039.30	2,448.63	3,847.36	2,812.25	5,454.12	116,638.73
439,003.53	44,864.53	41,064.47	90,479.84	220,526.63	67,471.67	114,233.57	3,705,451.43
737.17	2,452.59	2,162.08	816.20	764.14	1,034.53	1,910.80	30,222.81
32,595.85	4,050.11	4,494.40	2,244.19	✗ 269.48	304.01	266.23	111,924.76
1,029.37	1,859.48	1,111.29	2,107.35	274.21	1,077.90	2,158.08	42,656.92
2,563.39	1,439.69	✗192.62	✗ 94.00	880.54	1,859.67	1,124.94	17,219.37
11,800.94	29,965.80	32,813.13	66,759.86	42,845.08	35,806.46	36,107.46	499,829.96
-	-	-	-	-	-	-	-
149,445.40	472,709.42	577,202.73	612,274.91	330,691.91	212,761.19	172,857.84	2,888,441.59
19,227.45	14,045.52	1,890.95	24,582.95	1,873.22	6,825.07	5,087.16	118,413.38
13,459.50	15,227.81	24,306.53	23,284.52	32,893.25	28,206.71	33,405.41	330,563.74
7,372.27	282.46	2,198.81	10,389.19	✗ 2,275.27	✗4,489.20	3,668.54	38,518.52
40,134.68	✗1,704.54	12,343.09	✗15,621.76	✗ 8,387.88	✗ 6,645.15	✗ 218.98	71,625.45
74,973.88	-	1,250.00	-	-	-	1,054.14	195,727.58
6,132.82	8,728.58	141.13	5,863.90	4,385.63	8,129.16	5,628.27	50,391.82
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
489,880.09	267.16	-	-	-	-	-	756,601.18
085,101.83	791,396.18	868,217.71	1,434,789.35	1,304,861.62	888,836.74	993,194.05	20,778,876.76
238,082.89	31,261.26	43,717.38	64,791.12	18,000.65	✗169,301.26	110,483.88	2,009,395.14
269,050.94	✗169,867.28	✗92,468.10	28,283.58	✗170,015.46	✗ 21,626.40	✗20,734.52	4,723,525.14
✗33,976.08	✗138,606.02	✗48,750.72	90,074.70	✗152,014.81	190,927.66	89,749.36	6,732,920.28
,051,125.28	652,792.16	819,466.99	1,524,864.05	1,152,846.81	397,609.08	1,082,943.41	27,511,797.04
-	32,124,303.20	-	-	-	-	-	32,124,303.20
,051,125.28	32,777,095.36	819,466.99	1,524,864.05	1,152,846.81	397,609.08	1,082,943.41	59,636,100.24

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT OF GAS SOLD IN M. CUBIC FEET

BY RETAIL DISTRICTS AND WHOLESALE CONSUMERS

FROM JULY 1, 1909 TO DECEMBER 31, 1923

Line No.	Particulars	Six Months Ended December 31 1909	Year Ended December 1910	1911	1912	1913	1914	1915	1916	1917	1
(1)	RETAIL SALES:										
(2)	West Virginia-										
(3)	Charleston	1,017,323	3,328,315	3,864,070	6,819,123	4,821,146	3,940,946	4,000,362	4,851,604	6,612,836	7,
(4)	Huntington	409,267	1,464,452	1,461,881	1,704,677	1,586,748	1,423,992	968,636	1,005,421	1,166,195	1,
(5)	Williamson	-	-	-	-	-	131,682	155,604	186,765	210,734	
(6)	Spencer	-	-	-	-	1,286,124	848,666	572,998	804,021	772,737	
(7)	Miscellaneous	22,934	392,061	492,195	714,144	386,745	326,104	265,896	421,227	939,923	1,
(8)											
(9)	Total West Virginia	1,449,524	5,184,828	5,808,116	9,237,944	7,782,763	6,670,390	5,963,494	6,971,038	9,702,125	11,
(10)											
(11)	Ohio	970,799	3,254,932	3,422,823	4,200,846	4,455,694	3,914,043	5,143,107	6,683,166	6,393,151	8,
(12)	Kentucky	950,551	2,626,233	2,183,619	2,080,864	2,662,883	2,579,719	1,270,845	1,593,275	3,295,295	3,
(13)											
(14)	Total Retail Sales	3,370,874	11,066,993	11,384,458	15,519,354	14,871,340	13,164,152	12,377,446	15,247,479	19,393,571	16,
(15)											
(16)	WHOLESALE SALES:										
(17)	Columbia Gas and Electric Co.	-	4,001,355	7,452,831	7,190,127	6,322,986	6,068,130	6,422,776	8,191,870	10,256,018	8,
(18)	Ohio Fuel Supply Co.	-	3,005,935	3,964,642	4,663,416	5,045,974	6,952,662	6,846,418	10,002,914	10,943,059	11,
(19)	Central Kentucky Natural Gas Co.	-	-	-	108,049	858,929	968,761	974,238	1,149,809	1,191,654	1,
(20)	Louisville Gas and Electric Co.	-	-	-	-	-	929,615	1,673,253	2,200,293	2,551,008	2,
(21)	Portsmouth Gas Company	306,455	937,365	923,257	1,120,005	1,032,371	1,199,838	1,179,089	1,444,868	1,775,318	1,
(22)	Hope Natural Gas Co.	-	166,663	-	-	-	-	-	-	6,148,788	7,
(23)	Pittsburg and West Virginia Natural Gas Co.	-	-	-	-	-	-	-	-	6,327,523	7,
(24)	Montgomery Gas Co.	-	-	-	-	-	-	-	-	-	
(25)	Industrial Gas Co.	-	-	-	-	-	-	-	-	-	
(26)	All Others	-	-	-	-	-	-	121,462	1,053,213	23,927	
(27)											
(28)	Total Wholesale Sales	306,455	8,111,218	12,340,730	13,101,596	13,260,260	16,118,993	17,217,227	24,042,967	41,217,295	40
(29)											
(30)	Total Sales	3,677,329	19,177,211	23,725,188	28,620,950	28,131,600	29,283,145	29,594,673	39,290,446	60,610,866	57
(31)											

...SHIPPING...

...C EAST

...CONSUMERS

...1923

...d ... D e c e m b e r ... 3 1

1916	1917	1918	1919	1920	1921	1922	1923	Total	Line No.
									(1)
									(2)
4,691,504	6,612,036	7,949,868	7,918,963	8,429,990	6,167,076	6,164,447	6,955,179	62,830,663	(3)
1,006,421	1,166,195	1,198,961	1,401,979	1,673,362	1,502,976	1,880,424	2,613,146	21,512,087	(4)
180,765	810,734	226,792	283,504	304,813	295,950	313,966	343,282	2,429,097	(5)
804,021	772,737	613,644	871,106	843,437	422,948	319,128	298,816	6,783,833	(6)
421,227	939,923	1,135,575	1,198,677	1,574,597	1,514,814	1,474,743	1,466,226	12,289,861	(7)
6,971,036	9,702,125	11,124,837	11,838,229	12,826,199	9,953,771	10,152,708	11,676,649	125,811,331	(8)
									(9)
6,663,166	6,393,151	2,360,561	1,220,629	2,613,624	1,381,157	2,146,677	1,509,750	49,678,589	(10)
1,093,278	3,296,296	3,203,371	2,763,281	3,736,214	1,847,370	2,573,333	3,243,893	36,583,946	(11)
10,247,479	19,393,571	16,696,489	15,322,139	18,876,037	13,182,298	14,872,918	16,429,288	211,773,836	(12)
									(13)
8,191,870	10,256,018	8,570,202	7,301,647	10,313,994	7,464,572	9,412,164	9,785,968	106,782,634	(14)
10,003,914	10,943,089	11,000,964	9,455,426	8,634,633	6,558,874	7,841,268	7,627,205	103,263,381	(15)
1,149,809	1,191,654	1,379,850	1,668,596	1,519,962	1,776,629	1,901,323	1,838,383	14,629,120	(16)
2,200,293	2,991,008	2,601,884	2,704,920	2,637,474	2,829,629	2,270,388	1,027,391	21,125,482	(17)
1,444,868	1,775,318	1,766,074	1,439,088	1,821,361	1,135,679	1,191,212	1,277,742	16,279,556	(18)
-	8,148,786	7,227,560	7,461,440	4,213,906	5,337,561	3,841,636	4,416,703	40,814,247	(19)
-	6,327,523	7,270,321	6,822,967	4,073,210	3,967,166	5,772,484	4,080,135	37,691,700	(20)
-	-	-	-	-	24,774	97,665	129,614	251,993	(21)
-	-	-	-	-	41,655	63,542	-	105,197	(22)
1,083,213	23,927	22,402	74,083	-	-	3,004	7,900	1,705,961	(23)
24,042,967	41,217,295	40,338,687	36,328,136	32,919,420	28,636,523	34,994,593	30,006,171	346,220,241	(24)
39,290,446	60,610,866	57,038,148	51,650,275	51,795,457	42,018,821	46,867,511	46,435,459	557,994,077	(25)

JIBGAL EO. 7 CORRECTED

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT SHOWING SOURCE AND APPLICATION OF FUNDS

FROM JANUARY 1, 1931 TO DECEMBER 31, 1935

SOURCE OF FUNDS:				
From Capital Sources-				
Net Increase in Funded Debt			$ 3,881,427.10	
Less- Discount and Expense in connection therewith			308,662.43	$ 3,318,764.67
From Earnings-				
Surplus Net Income before Depletion, Depreciation and Federal Income Taxes			$30,811,780.26	
Add Back-				
Cost of Drilling Wells Charged to Expense	$1,763,563.83			
Abandoned Leases Charged to Expense	809,310.08			
Sinking Fund Appropriations	1,747,480.63			
Sale of Malley Oil and Development Company Stock	370,000.00	$ 4,690,354.54		
Deduct-				
Federal Income Taxes	$4,958,689.04			
Surplus Adjustments (Net)	X 876,548.50	4,376,134.38	314,220.16	30,536,000.42
Total Funds Provided				$33,854,765.09
APPLICATION OF FUNDS:				
For Capital Purposes-				
Increase in Plant, Property, Rights, Franchises, Etc.		$30,569,858.82		
Less- Adjustments		938,358.76		
		$29,617,550.06		
Less- Capital Surplus Created through Appraisal		11,571,629.47	$18,046,980.79	
Property Retirements during Period			3,035,242.04	$21,142,182.83
Increase in Investments				1,424,101.19
Total Expended for Capital Purposes				$22,566,284.02
For Surplus and Reserve Purposes-				
Cash Dividends Declared and Paid				88,084,900.00
Balance- Represented by Increase in Working Capital-				
Increase in Current Assets			$ 3,161,980.41	
Increase in Deferred Charges and Prepaid Accounts			221,288.98	
			$ 3,383,247.33	
Less- Increase in Current Liabilities			128,646.26	3,254,601.07
Total as above				$33,844,765.09

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UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

STATEMENT SHOWING NET EARNINGS OF GASOLINE DEPARTMENT AND RATIO OF SAME TO GASOLINE INVESTMENT

JIRGAL EX. NO. 8

Particulars	Year Ended December 31 1916	1917	1918	1919	1920	1921	1922	1923
GROSS EARNINGS	$370,900.17	$1,916,946.48	$2,320,701.77	$2,894,409.38	$3,614,510.10	$2,756,084.14	$3,053,300.33	$3,013,860.53
OPERATING EXPENSES AND ORDINARY TAXES:								
Manufacturing Costs-								
Labor and Teaming		$ 68,240.49	$ 88,648.75	$ 107,084.52	$ 167,141.30	$ 158,332.50	$ 158,824.21	$ 174,179.83
Fuel		41,534.16	40,283.98	43,389.31	52,854.51	53,368.62	65,108.99	61,850.14
Mineral Seal Oil		31,569.02	42,584.73	52,941.54	84,082.67	34,465.01	26,894.20	26,706.48
Other Supplies		15,324.29	16,180.04	16,942.96	20,144.93	19,451.91	17,532.40	19,799.17
Maintenance Labor		9,631.27	29,213.42	17,427.20	41,929.95	29,405.07	26,850.26	21,754.69
Maintenance Material		4,654.14	9,442.51	17,170.82	23,755.91	14,259.98	16,086.85	16,336.73
Total Manufacturing Costs		$ 170,953.37	$ 226,353.43	$ 254,956.35	$ 389,909.27	$ 309,283.09	$ 313,296.89	$ 320,627.04
	$ 71,606.72							
Other Expense-								
Freight on Gasoline		$ 149,623.13	$ 79,374.79	$ 126.90	$ 624.86	$ -	$ -	$ 347,396.02
Use of Tank Cars		3,677.49	36,871.69	16,388.05	-	-	-	-
Royalty		62,125.00	79,223.79	93,487.80	105,760.17	* 56,560.85	* 3,088.36	9,631.68
Rent and Interest		6,295.84	7,835.67	8,952.20	17,142.52	17,709.15	21,305.85	23,103.26
Guard Duty		5,283.67	2,841.39	-	-	-	-	-
Use of Gas		-	2,035.37	10,524.98	22,438.37	24,463.31	28,916.28	24,031.69
Insurance		-	-	-	-	-	12,851.50	11,059.22
Miscellaneous		-	732.47	-	-	-	-	-
Total Other Expense		$ 227,005.13	$ 210,914.97	$ 129,479.93	$ 145,965.92	$ 98,733.31	$ 66,161.99	$ 415,221.87
Total Above	$ 71,606.72	$ 397,958.50	$ 437,268.40	$ 384,436.28	$ 535,875.19	$ 408,036.40	$ 379,458.88	$ 735,848.91
General Expenses (Apportioned)	7,127.61	33,937.41	35,212.27	29,620.89	38,208.83	33,538.59	46,307.50	70,637.42
Taxes (Other than Federal Income Taxes)	2,605.30	4,423.66	6,262.36	10,124.80	14,928.36	17,832.50	29,897.05	40,537.29
Total Operating Expenses and Ordinary Taxes	$ 81,339.63	$ 436,319.57	$ 478,743.03	$ 424,181.97	$ 589,009.38	$ 459,404.49	$ 455,663.43	$ 847,023.62
Net Earnings before Depreciation and Federal Income Taxes	$288,560.34	$1,482,620.91	$1,881,958.74	$2,470,227.41	$3,025,500.72	$2,296,679.65	$2,597,636.90	$2,166,836.91
DEDUCTIONS:								
Depreciation	$ 27,998.08	$ 43,767.89	$ 82,599.96	$ 78,297.00	$ 93,834.73	$ 98,985.22	$ 107,348.38	$ 116,739.73
Federal Income Taxes (Estimated)	5,210.00	114,960.00	214,320.00	237,658.00	291,080.00	196,520.00	286,877.11	181,310.36
Total Deductions	$ 33,208.08	$ 187,727.89	$ 296,919.96	$ 282,952.00	$ 384,914.73	$ 297,505.22	$ 394,225.46	$ 298,050.09
Net Earnings	$255,352.26	$1,324,893.02	$1,583,038.78	$2,207,275.41	$2,640,585.99	$1,999,174.43	$2,203,411.44	$1,868,786.82
50% OF NET EARNINGS APPORTIONED TO GAS DEPARTMENT	$127,676.13	$ 662,446.51	$ 791,519.38	$1,103,637.71	$1,320,293.00	$ 999,587.22	$1,101,705.72	$ 934,393.41
Net Earnings Applicable to Gasoline Investment	$127,676.13	$ 662,446.51	$ 791,519.38	$1,103,637.70	$1,320,292.99	$ 999,587.21	$1,101,705.72	$ 934,393.41
GASOLINE INVESTMENT AT END OF YEAR	$279,960.77	$ 437,678.87	$ 525,999.83	$ 752,970.03	$ 938,347.34	$ 989,852.22	$1,073,483.50	$1,167,397.25
PER CENT OF RETURN EARNED	45.60	151.36	150.46	146.57	140.70	100.98	102.63	80.40

* Royalties Adjusted.

JINGAL EX. NO. 9

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF REVENUES AND EXPENSES - GASOLINE DEPARTMENT

FOR THE YEAR ENDED OCTOBER 31, 1924

Particulars	November 1923		December 1923		Ten Months Ended October 31, 1924		
	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Year Ended Oct. 31, 1924
GROSS EARNINGS	$58,942.22	$ 2,420.91	$41,313.49	$ 2,346.12	$1,907,509.63	$ 32,909.06	$2,439,441.43
OPERATING EXPENSES AND ORDINARY TAXES:							
Manufacturing Costs-							
Labor, Teaming and Freight	$ 13,897.33	$ 398.11	$ 13,993.20	$ 387.85	$ 198,857.95	$ 4,669.58	$ 161,904.02
Fuel	5,376.84	-	9,744.85	-	82,066.24	-	63,187.63
Mineral Seal Oil	2,546.22	13.70	2,650.19	-	16,404.03	19.05	21,633.32
Other Supplies	2,769.18	36.19	1,499.60	33.42	16,664.49	286.76	20,289.64
Maintenance Labor	1,947.65	48.86	2,650.54	26.56	15,219.40	453.20	20,345.91
Maintenance Material	1,274.82	18.28	1,145.25	23.57	10,430.90	233.93	15,186.75
Total Manufacturing Costs	$ 26,812.04	$ 514.84	$ 27,683.43	$ 471.40	$ 339,343.01	$ 5,662.56	$ 300,487.27
Other Expenses-							
Freight on Gasoline	$ 53,319.74	$ 340.15	$ 54,545.24	$ 338.58	$ 370,675.76	$ 5,766.69	$ 485,186.16
Rent and Interest	1,982.58	-	2,190.70	-	13,334.97	-	17,488.08
Use of Gas	1,637.70	-	1,774.18	-	14,766.57	-	18,180.26
Insurance	803.48	12.59	836.31	18.87	7,384.12	192.98	9,268.05
Total Other Expenses	$ 57,743.30	$ 352.74	$ 59,346.43	$ 357.15	$ 406,163.42	$ 5,959.67	$ 530,122.51
General Expenses	$ 6,263.21	$ 330.75	$ 6,263.18	$ 177.41	$ 58,876.20	$ 4,425.78	$ 66,338.53
Taxes	1,373.78	692.00	10,804.68	406.59	38,759.86	3,994.87	55,021.22
Total	$ 7,636.99	$ 1,024.75	$ 3,941.50	$ 584.00	$ 107,636.06	$ 8,420.65	$ 121,360.75
Total Operating Expenses and Ordinary Taxes	$ 92,192.33	$ 1,892.33	$ 83,088.36	$ 1,612.55	$ 783,143.09	$ 20,042.87	$ 951,970.53
Net Earnings Before Depreciation and Federal Income Taxes	$150,749.89	$ 528.58	$158,225.13	$ 733.57	$1,124,367.54	$ 12,866.19	$1,487,470.90
DEDUCTIONS:							
Depreciation	$ 11,777.61	$ -	$ 11,777.61	$ -	$ 117,776.10	$ -	$ 141,331.32
Federal Income Taxes	15,000.00	-	15,000.00	-	101,454.05	-	121,454.08
Total Deductions	$ 26,777.61	$ -	$ 26,777.61	$ -	$ 219,230.15	$ -	$ 262,785.40
Net Earnings	$123,972.28	$ 528.58	$131,447.52	$ 733.57	$ 939,137.39	$ 12,866.19	$1,214,685.50
50% OF NET EARNINGS APPLICABLE TO GAS DEPARTMENT	$ 66,986.14	$ 264.29	$ 65,723.76	$ 366.79	$ 467,568.68	$ 6,433.10	$ 607,342.76
Net Earnings Applicable to Gasoline Department	$ 66,986.14	$ 264.29	$ 65,723.76	$ 366.79	$ 467,568.68	$ 6,433.10	$ 607,342.76

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1874

JINSAL EX. NO. 94

UNITED FUEL GAS COMPANY, INC. AND SUBSIDIARIES

A N D

VIRGINIAN GASOLINE AND OIL COMPANY

STATEMENT OF REVENUES AND EXPENSES - GASOLINE DEPARTMENT

FOR THE YEAR ENDED DECEMBER 31, 1924

Particulars	Ten Months Ended October 31, 1924			November 1924	December 1924	Year Ended Dec. 31, 1924
	Virginian Gasoline and Oil Company	Cabin Creek Gas Company	Total			
GROSS EARNINGS	$1,907,509.63	$32,909.06	$1,940,418.69	$133,428.50	$179,787.11	$2,253,634.30
OPERATING EXPENSES AND ORDINARY TAXES:						
Manufacturing Costs and Other Expenses	$ 648,506.23	$11,622.22	$ 667,128.45	$ 69,067.02	$ 76,893.51	$ 803,088.98
General Expense	60,676.20	4,425.78	73,301.98	6,140.77	5,929.92	85,372.67
Taxes	36,789.66	3,994.87	42,784.53	1,848.27	874.15	45,476.95
Total Operating Expenses and Ordinary Taxes	$ 783,142.09	$20,042.87	$ 773,184.96	$ 77,056.06	$ 83,697.58	$ 933,938.60
Net Earnings before Depreciation and Federal Income Taxes	$1,184,367.54	$12,866.19	$1,167,233.73	$ 56,372.44	$ 96,089.53	$1,319,695.70
DEDUCTIONS:						
Depreciation	$ 117,776.10	$ -	$ 117,776.10	$ 11,777.61	$ 11,777.61	$ 141,331.32
Federal Income Taxes	101,454.08	-	101,454.08	3,214.22	7,588.76	112,254.06
Total Deductions	$ 219,230.18	$ -	$ 219,230.18	$ 14,991.83	$ 19,363.37	$ 253,585.38
Net Earnings	$ 938,137.36	$12,866.19	$ 946,003.55	$ 41,380.61	$ 76,726.16	$1,066,110.32
50% OF NET EARNINGS APPORTIONED TO GAS DEPARTMENT	467,568.68	6,433.10	474,001.78	20,690.31	38,363.08	533,055.17
Net Earnings Applicable to Gasoline Department	$ 467,568.68	$ 6,433.10	$ 474,001.77	$ 20,690.30	$ 38,363.08	$ 533,055.15

[fol. 1413a]

JUDICIAL EXHIBIT 3 J. C. No. 1

United Fuel Gas Company, Inc., and Subsidiaries

Statement Showing Distribution of Net Earnings (Before and After Considering Delayed Rentals) When Gas to Parent Companies is Valued on City Gate Prin
for Depreciation and Amortization is Computed on Original Cost of the Property for the Year Ended December 31, 1923

Particulars	Basis of apportionment	City of Charleston	City of Huntington	City of Williamson	Other West Virginia	Total West Virginia	Kentucky and Ohio
Gross Earnings per Books:							
Revenues from Sale of Gas	Direct	$1,110,919	$546,948	$81,678	$571,406	$2,310,951	$1,524,867
Miscellaneous Operating and Non-operating Revenues	Overhead on Revenues	3,788	1,866	279	1,947	7,880	5,202
Total Gross Earnings per Books		$1,114,707	$548,814	$81,957	$573,353	$2,318,831	$1,530,069
Add:							
50% of Gasoline Net Revenues	Sales	116,145	52,513	6,914	59,054	234,626	95,495
Adjustment of Parent Company Revenue (City Gate Rate Principle)	Direct						
Adjusted Gross Earnings		$1,230,852	$601,327	$88,871	$632,407	$2,553,457	$1,625,564
Operating Expenses and Taxes (including Income Taxes):							
Gas Purchased	Sales	$76,974	$34,803	$4,583	$39,137	$155,497	$63,289
Production	Sales	141,657	64,047	8,433	72,025	286,162	116,471
Transmission	System Demand Mileage	41,106	47,707	6,601	28,924	124,338	96,313
Distribution	Direct	48,452	24,251	2,807	25,688	101,228	57,966
Commercial	Direct	30,406	24,637	4,325	26,947	86,315	35,925
General and Inter Departmental	Overhead on Expenses	26,652	15,384	2,121	15,177	59,334	29,126
Total Above Items		$365,247	$210,829	$28,900	$207,898	$812,874	$399,090
Taxes (Ordinary)	Property	57,408	38,599	4,962	29,740	130,739	65,609
Taxes (Federal Income)	Taxable Income	19,000	8,264	1,292	9,280	37,836	27,302
Profit and Loss Adjustments	Overhead on Expenses	2,082	1,202	166	1,185	4,635	2,275
Total Operating Expenses and Taxes		$443,797	$258,894	$35,320	$248,103	$986,084	$494,276
Net Earnings Available for Depreciation, Amortization and Return		$787,055	$342,433	$53,581	$384,304	$1,567,373	$1,131,288
Deduct—Depreciation and Amortization on Original Cost Basis	Property	167,907	112,778	14,412	86,892	381,989	191,694
Net Earnings after Depreciation and Amortization		$619,148	$229,655	$39,169	$297,412	$1,185,384	$939,594
Add Back—Delayed Rentals on Unoperated Leaseholds and Leasehold Expense	Sales	73,236	33,112	4,360	37,237	147,945	60,215
Net Earnings Available for Return		$692,384	$262,767	$43,529	$334,649	$1,333,329	$999,809
Net Earnings Before Adding Back Delayed Rentals, etc.:							
Capitalized at 9%					8%	14,817,000	
Capitalized at 10%						$13,171,000	
Net Earnings After Adding Back Delayed Rentals, etc.:						11,854,000	
Capitalized at 9%					8%	16,666,000	
Capitalized at 10%						14,815,000	
						13,333,000	

JUDGE EXHIBIT 3 J. C. No. 1

United Fuel Gas Company, Inc., and Subsidiaries

f Net Earnings (Before and After Considering Delayed Rentals) When Gas to Parent Companies is Valued on City Gate Principle and When the Amount for Depreciation and Amortization is Computed on Original Cost of the Property for the Year Ended December 31, 1923

	Basis of apportionment	City of Charleston	City of Huntington	City of Williamson	Other West Virginia	Total West Virginia	Kentucky and Ohio	Wholesale service	Total for natural gas service
Non-operating Revenues	Direct	$1,110,919	$546,948	$81,678	$571,406	$2,310,951	$1,524,867	$3,863,003	$7,698,821
	Overhead on Revenues	3,788	1,8[illegible]	279	1,947	7,880	5,202	18,273	31,355
er Books		$1,114,707	$548,814	$81,957	$573,353	$2,318,831	$1,530,069	$3,881,276	$7,730,176
s	Sales	116,145	52,513	6,914	59,054	234,626	95,495	604,273	934,394
ny Revenue (City Gate	Direct							1,495,497	1,495,497
gs		$1,230,852	$601,327	$88,871	$632,407	$2,553,457	$1,625,564	$5,981,046	$10,160,067
cluding Income Taxes):									
	Sales	$76,974	$34,803	$4,583	$39,137	$155,497	$63,289	$400,478	$619,264
	Sales	141,657	64,047	8,433	72,025	286,162	116,471	737,001	1,139,634
	System Demand Mileage	41,106	47,707	6,601	28,924	124,338	96,313	379,433	600,084
	Direct	48,452	24,251	2,837	25,688	101,228	57,966		159,194
	Direct	30,406	24,637	4,325	26,947	86,315	35,925		122,240
tal	Overhead on Expenses	26,652	15,384	2,121	15,177	59,334	29,126	119,436	207,896
		$365,247	$210,829	$28,900	$207,898	$812,874	$399,090	$1,636,348	$2,848,312
	Property	57,468	38,599	4,932	29,740	130,739	65,609	282,559	478,898
	Taxable Income	19,000	8,264	1,292	9,280	37,836	27,302	247,208	312,346
	Overhead on Expenses	2,082	1,202	166	1,185	4,635	2,275	9,331	16,241
es and Taxes		$443,797	$258,894	$35,290	$248,103	$986,084	$494,276	$2,175,437	3,655,797
ble for Depreciation,									
turn		$787,055	$342,433	$53,581	$384,304	$1,567,373	$1,131,288	$3,805,609	$6,504,270
ation on Original Cost									
	Property	167,907	112,778	14,412	86,892	381,989	191,694	825,544	1,399,227
preciation and Amortiza-									
		$619,148	$229,655	$39,169	$297,412	$1,185,384	$939,594	$2,980,065	$5,105,043
Unoperated Leaseholds									
	Sales	73,236	33,112	4,360	37,237	147,945	60,215	381,026	589,186
le for Return		$692,384	$262,767	$43,529	$334,649	$1,333,329	$999,809	$3,361,091	$5,694,229
ck Delayed Rentals, etc.:					8%	14,817,000		8%	63,813,000
						$13,171,000			$56,723,000
						11,854,000			51,050,000
Delayed Rentals, etc.:					8%	16,666,000		8%	71,177,000
						14,815,000			63,269,000
						13,333,000			56,942,000

[f. d. 1413b]

JUDICIAL EXHIBIT 3 J. C. No. 2

United Fuel Gas Company, Inc., and Subsidiaries

Statement Showing Distribution of Net Earnings (Before and After Considering Delayed Rentals) When Gas to Parent Companies is Valued on Basis of Amount Paid by Comparable Companies and When Amount for Depreciation and Amortization as Set Forth in Commission's Findings are Accepted for the Year Ended December 31, 1923

Particulars	Basis of apportionment	City of Charleston	City of Huntington	City of Williamson	Other West Virginia districts	Total West Virginia	Kentucky and Ohio	Wholesale service	Total for natural gas service
Gross Earnings per Books:									
Revenues from Sale of Gas	Direct	$1,110,919	$546,948	$81,678	$571,406	$2,310,951	$1,524,867	$3,863,003	$7,698,821
Miscellaneous Operating and Non-operating Revenues	Overhead on Revenues	3,788	1,866	279	1,947	7,880	5,202	18,273	31,355
Total Gross Earnings per Books		$1,114,707	$548,814	$81,957	$573,353	$2,318,831	$1,530,069	$3,881,276	$7,730,176
Add:									
50% Gasoline Net Revenues	Sales	116,145	52,513	6,914	59,054	234,626	95,495	604,273	934,394
Adjustment of Parent Company Revenue (on basis of Commission's Decision)	Direct							2,143,661	2,143,661
Adjusted Gross Earnings		$1,230,852	$601,327	$88,871	$632,407	$2,553,457	$1,625,564	$6,629,210	$10,808,231
Operating Expenses and Taxes:									
Gas Purchased	Sales	$76,974	$34,803	$4,583	$38,137	$155,497	$63,289	$400,478	$619,264
Production	Sales	141,657	64,047	8,433	72,025	286,162	116,471	737,001	1,139,634
Transmission	System Demand Mileage	41,106	47,707	6,601	28,924	124,338	96,313	379,433	600,084
Distribution	Direct	48,452	24,251	2,837	25,688	101,228	57,966		159,194
Commercial	Direct	30,406	24,637	4,325	26,947	86,315	35,925		122,240
General and Inter-Departmental	Overhead on Expenses	26,652	15,384	2,121	15,177	59,334	29,126	119,436	207,896
Total Above Items		$365,247	$210,829	$28,900	$207,898	$812,874	$399,090	$1,636,348	$2,848,312
Taxes (Ordinary)	Property	57,468	38,599	4,932	29,740	130,739	65,609	282,550	478,898
Taxes (Federal Income)	Taxable Income	19,000	8,264	1,292	9,280	37,836	27,302	328,228	393,366
Profit and Loss Adjustments	Overhead on Expenses	2,082	1,202	166	1,185	4,635	2,275	9,331	16,241
Total Operating Expenses and Taxes		$443,797	$258,894	$35,290	$248,103	$986,084	$494,276	$2,256,457	$3,736,817
Net Earnings Available for Depreciation, Amortization and Return		$787,055	$342,433	$53,581	$384,304	$1,567,373	$1,131,288	$4,372,753	$7,071,414
Deduct—Depreciation and Amortization on Cost of Reproduction Basis	Property	227,944	153,103	19,565	117,961	518,573	260,237	1,120,727	1,899,537
Net Earnings after Depreciation and Amortization		$559,111	$189,330	$34,016	$266,343	$1,048,800	$871,051	$3,252,026	$5,171,877
Add Back—Delayed Rentals on Unoperated Leaseholds and Leasehold Expenses	Sales	73,236	33,112	4,360	37,237	147,945	60,215	381,026	589,186
Net Earnings Available for Return		$632,347	$222,442	$38,376	$303,580	$1,196,745	$931,266	$3,633,052	$5,761,063
Net Earnings Before Adding Back Delayed Rentals, etc.:					8%	13,110,000		8%	64,649,000
Capitalized at 9%						$11,653,000			$57,465,000
Capitalized at 10%						10,488,000			51,719,000
Net Earnings After Adding Back Delayed Rentals, etc.:					8%	14,959,000		8%	72,013,000
Capitalized at 9%						13,297,000			64,012,000
Capitalized at 10%						11,967,000			57,611,000

[fol. 1876] HAGENAH EXHIBIT No. 1

[fol. 1877] Hagenah & Erickson, First National Bank Building, Chicago

William J. Hagenah, Halford Erickson, Victor A. Dorszeski

Appraisals, Cost Analyses, Rate Studies, Financial Investigations

November the Fifth, 1924.

Mr H. D. Rummel, City Solicitor, Charleston, West Virginia.

DEAR SIR: Pursuant to your instructions, I have made an analysis of the inventory and appraisal report covering the property of the United Fuel Gas Company as of December 31, 1923, as made by Messrs. Ford, Bacon & Davis, and submit herewith my conclusions.

My investigation embraced a check of the inventory and analysis of the costs contained in the above report. The inventory check was made by following the same course adopted by the company's engineers, my attention, however, being confined to sections of the major accounts selected at random. The unit costs were analyzed in detail, first by a check against the actual costs incurred for similar work by the company under conditions fairly comparable, and also by inquiries of manufacturers, jobbers and contractors as to labor and material prices prevailing in the territory in question as of the appraisal date. In like manner, a study was made of other features of the report, such as the appraisal of the natural gas lands and leaseholds, the allowance for working capital, the provision for overhead charges and the deduction from the reproduction cost new to reflect the measure of depreciation.

The inventory was found to be correct and it appears to have been prepared with thoroughness and regard for detail in all important respects. The unit costs also fairly reflect the cost of reproducing the property on the level of labor and material prices on which such estimates were based. The allowance for working capital was checked against the company's books and is believed to be conservative.

Regarding some aspects of the case, I am inclined to take issue with the report. The appraisal results covering the gas reserve are excessive and have been arrived at by the company's engineers through the use of a theory of valuation which has no application in the appraisal of natural gas properties. A study of the facts as set [fol. 1878] forth in the report above referred to and also other data submitted by the United Fuel Gas Company shows that the book cost of the natural gas lands, leaseholds and rights as set forth in the accounting report prepared by Mr. Jurgal is more nearly correct and proper, and for that reason such cost has been included in the summary attached hereto. The provision for overhead charges included in the appraisal is also excessive. Because of the substantial provision made for sundry items of overhead expenses in the unit costs, the allowance for general overhead charges should not exceed 18 per cent, and this provision is included in the attached summary.

Adjustment has also been made in the per cent condition of the property because the deduction for depreciation set forth in the report by Ford, Bacon & Davis was made without regard to the facts developed by the same engineers in other parts of their report. Obviously, the useful life of a large part of the company's property is limited to the life of the natural gas fields, which latter period the engineers have found to be approximately 18 years. The per cent condition of the property was determined by the above engineers from an inspection of the physical property, in which consideration was apparently given only to its actual physical condition as of the inventory date. This method ignores the limitation on the use of the property which the life of the field imposes, with the result that since the investment must be amortized over the life of such field, the present worth of the property affected thereby should be determined with regard to such diminishing value, especially when such loss in worth is being met through operating charges. Because of this fact the ordinary rules for determining the measure of depreciation by inspection do not apply. The inspection method in this instance applies only to those items of property whose normal expectancy of life in service is at this time less than eighteen years and which must therefore be replaced before the exhaustion of the field. However, in respect to those items or classes of property whose reasonable expectancy extends beyond the 18 year period, the extent of depreciation cannot be determined by the inspection method, but must be ascertained through the application of the amortization principle.

In order to apply the above rules to the appraisal in question, a study was made of the company's records to ascertain the age of each major unit of property and the average age of each such group, from which data the present worth was determined. The following example is submitted as an illustration of the above method [fol. 1879]. Assume that the age of a unit of property is 10 years and that its normal expectancy is not in excess of another 10 years, making its probable life 20 years. In this instance the inspection method is deemed proper for the replacement is here unaffected by the life of the field and the per cent condition determined by Ford, Bacon & Davis should therefore be accepted. Where, however, a unit of property is found to be 9 years old at this time and its future life is limited by the life of the field, namely, 18 years, the total life of this unit or class of property must, for the purpose of this case, be the sum of these two amounts, or 27 years. Since one-third of this term has already expired, the remaining property is in 66.6 per cent condition, for no replacement of the unit will be necessary and the investment will have been restored to the owners on the exhaustion of the field through the operation of the depreciation or amortization charges. To apply the inspection method in this instance, where the physical condition may reasonably be 90 per cent, would result in a charge against the public for the gradual retirement of the property over 18 years with such capital being returned to the owners for investment elsewhere, while the return on practically the full reproduction cost is being included in the operating expenses of this utility for such entire period. This clearly results in a duplication of cost

In the appraisal summaries attached hereto there is shown in each instance the method by which the per cent condition was ascertained. In all cases where the normal life of the property will be cut short by the exhaustion of the gas reserves the per cent condition has been ascertained by the application of the amortization rule, but in all other instances the facts as found by Ford, Bacon & Davis have been accepted. This course has been followed for the entire property, regardless of the state in which it is located.

The application of the above rule is also important as affecting the present value of the local distribution systems. In the large cities, such as Charleston and Huntington, the exhaustion of the natural gas fields will not mean the loss of the investment in mains and services laid for meeting domestic and commercial demands. These cities will be supplied by artificial gas plants and the present distribution systems are adapted to such use. For this reason their present value should be determined by the inspection method, as was followed by the company's engineers. In many small cities now served with natural gas the available business would not warrant the con-[fol. 1880] struction of an artificial gas plant and consequently the present value of the distribution systems now devoted to this service must be ascertained through the application of the amortization rule. The following cities are considered of sufficient importance to be supplied with artificial gas on the exhaustion of the natural gas reserves, the distribution systems in the other communities having been depreciated on the basis of an 18 year remaining life:

West Virginia	Kentucky	Ohio
Charleston,	Ashland,	Ironton,
South Charleston,	Catlettsburg	New Boston,
Huntington,		Portsmouth.
Kenova,		
Logan,		
Spencer,		
Williamson.		

The present value of all meters, regulators and accessory property must be determined by the inspection method, and the findings of Ford, Bacon & Davis pertaining thereto have been accepted.

Attached hereto is a condensed report setting forth in summary form the adjustments above described as applied to the report made by Ford, Bacon & Davis. The reproduction cost new and such reproduction cost less the existing depreciation, on the basis herein set forth, as of December 31, 1923, were $43,114,072 and $31,692,100, respectively. These conclusions are in each case exclusive of any provision, directly or indirectly, for going concern value.

Respectfully submitted, Wm. J. Hagenah.

United Fuel Gas Company

Summary of Appraisal as of December 31, 1923

Account number	Classification	Reproduction cost new	Present value
	Production System Property		
204–5–7	Land, Leaseholds and Natural Gas Rights*	$6,732,920	$6,732,920
206	Rights of Way	111,454	111,454
208	Gas Well Structures	59,360	44,520
209	Field Measuring Station Structures	4,919	4,379
210	Other Production System Structures	111,759	70,955
211	Gas Well Construction	5,869,386	2,699,917
212	Gas Well Equipment	2,156,587	1,470,733
213	Field Line Construction	1,244,603	839,667
214	Field Line Equipment	2,658,379	1,864,552
215	Field Measuring Station Equipment	41,360	32,177
216	Drilling and Cleaning Equipment	204,030	142,822
217	Other Production System Equipment	33,035	28,079
	Total	19,227,792	14,042,175
	Incomplete Construction	80,639	80,639
	Total	19,308,431	14,122,814
	Transmission System Property		
218	Land	3,533	3,533
220	Rights of Way	159,713	159,713
221	Compressor Station Structures	3,513,915	2,815,933
224	Compressor Station Equipment		

222	Transmission System Measuring Station Structures	26,258	17,619
225	Transmission System Measuring Station Equipment		
223	Other Transmission System Structures	212,610	165,980
226	Transmission System Equipment	9,520,856	6,524,313
227	Other Transmission System Equipment	35,235	29,950
	Total	13,472,120	9,717,032
	Incomplete Construction	3,635†	3,635†
	Total	13,468,485	9,713,397
	Distribution System Property		
228	Land	45,161	45,161
230	Rights of Way	4,891	4,891
231	District Regulator Structures	34,962	27,540
232	Other Distribution Structures	39,635	30,863
233	Gas Receivers and District Regulators	69,499	59,074
234	Distribution Line Equipment	1,768,976	1,372,773
235	Service Line Equipment	547,023	447,863
236	Meters		
237	Meter Installations	742,346	631,012
239	Other Distribution System Equipment	15,692	12,910
	Total	3,268,185	2,632,087
	Incomplete Construction	1,181	1,181
	Total	3,269,366	2,633,268

*Book cost as per Jirgal's report.
[†Red in copy.]

[fol. 1882]

Summary of Appraisal as of December 31, 1923—Continued

Account number	Classification	Reproduction cost new	Present value
	General Property		
244	General Office Land	$174,500	$174,500
245	Other General Land	31,653	31,653
247	General Office Structures	144,587	128,725
249	General Office Equipment	59,429	45,504
251	General Shop Equipment	18,055	14,979
252	General Stable Equipment	10,799	9,946
253	General Garage Equipment	28,608	22,537
255	General Telegraph and Telephone Equipment	204,214	142,714
256	General Tools and Implements	7,295	5,747
	Total	679,140	576,305
	Total Specific Construction Cost	36,725,422	27,045,784
	Overhead Charges, 18% **	5,398,650	3,656,316
	Total	42,124,072	30,702,100
	Working Capital	990,000	990,000
	Total Property, Exclusive of Going Concern Value	43,114,072	31,692,100

**No overhead charges computed on book cost of gas land, leaseholds and rights included above.

[fol 1883] United Fuel Gas Company

Production System Property

Book cost of land, leaseholds, and natural gas rights $6,732,920

[fol 1884] United Fuel Gas Company

Production System Property (Exclusive of Land, Leaseholds, and Natural Gas Rights)

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
206	Rights of Way:					
	West Virginia	$101,980	..	..	..	.....
	Kentucky	9,474	..	..	..	.....
	Total	111,454	..	..	*	$111,454
208	Gas Well Structures:					
	West Virginia	59,360	..	..	*	44,520
209	Field Measuring Station Structures					
	West Virginia	4,702	..	..	..	.....
	Kentucky	217	..	..	..	.....
	Total	4,919	..	..	*	4,379
210	Other Production System Structures:					
	West Virginia	108,113	20	11	63	68,111
	Kentucky	3,646	..	..	*	2,844
	Total	111,759	..	..	..	70,955
211	Gas Well Construction					
	West Virginia	5,631,849	..	..	..	.....
	Kentucky	257,537	..	..	..	.....
	Total	5,889,386	..	..	*	2,939,917
212	Gas Well Equipment					
	West Virginia	2,061,807	..	..	..	.....
	Kentucky	94,780	..	..	..	.....
	Total	2,156,587	..	..	*	1,470,733
213	Field Line Construction:					
	West Virginia	1,114,395	27	9	66	735,501
	Kentucky	130,208	..	..	*	104,166
	Total	1,244,603	..	..	..	839,667

*Ford, Bacon & Davis results accepted.

Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
214	Field Line Equipment					
	West Virginia	2,383,189	26	8	69	1,944,800
	Kentucky	275,190			*	220,352
	Total	2,658,379				1,964,552
[fol 1885]						
215	Field Measuring Station Equipment					
	West Virginia	39,956	23	5	78	31,166
	Kentucky	1,401	25	7	72	1,011
	Total	41,360				32,177
216	Drilling and Cleaning Equipment					
	West Virginia	195,908				
	Kentucky	8,122				
	Total	204,030			*	142,821
217	Other Production System Equipment					
	West Virginia	31,980				
	Kentucky	1,945				
	Total	33,925			*	28,079
	Total Production System Property	12,404,872				7,306,255
[fol 1886]	Transmission System Property					
218	Land					
	West Virginia	$3,383				
	Kentucky	150				
	Total	3,533			*	3,533
220	Right-of-Way					
	West Virginia	139,583				
	Kentucky	20,505				
	Ohio	8,625				
	Total	159,713			*	159,713

*Ford, Bacon & Davis results accepted

Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
221.224	Compressing Station Structures and Equipment:					
	Huff Lick	324,551	37	4	82	266,148
	Cobb	791,669	42	4	82	650,759
	Frozen Camp	21,586	20	2	90	19,426
	Goad	114,502	26	8	69	79,317
	Kanawha	578,658	22	4	82	474,500
	Kermit	265,944	25	7	72	191,480
	Mammoth—Sun day Creek	155,774	20	2	90	122,197
	Porter	66,736	20	5	78	52,054
	Spencer	591,102	24	6	75	443,330
	Walgrove	993,526	21	3	86	708,632
	Ward	21,512	24	6	75	16,134
	Total	3,977,964				2,713,977
	Kentucky:					
	Hale	32,475	24	6	75	24,356
	Walbridge	103,466	24	6	75	77,600
	Total	135,941				101,956
222.225	Transmission System Measuring Station Structures and Equipment:					
	West Virginia	21,587	25	9	66	14,247
	Kentucky	3,170	25	7	72	2,282
	Ohio	1,501	25	7	72	1,081
	Total	26,258				17,610
[fol. 1887]						
223	Other Transmission System Structures:					
	West Virginia	198,080	25	5	78	154,502
	Kentucky	12,086	22	4	82	9,910
	Ohio	2,428	28	10	64	1,554
	Total	212,610				165,980
226	Transmission System Equipment:					
	West Virginia	7,620,452	20	7	69	5,256,612
	Kentucky	1,302,587	22	9	66	891,702
	Ohio	347,815	26	8	69	239,964
	Total	9,270,856				6,524,313
227	Other Transmission System Equipment:					
	West Virginia	25,825			*	21,949
	Kentucky	6,076			*	5,165
	Ohio	3,336			*	2,836
	Total	35,237				29,950
	Total Transmission System Property	13,422,130				9,717,032

*Part I, Raven & Davis results accepted.

Production System Property—Continued

[fol. 1888] Distribution System Property

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
228	Land:					
	West Virginia	$38,992				
	Kentucky	3,186				
	Ohio	2,983				
	Total	45,161			*	$45,161
230	Rights of Way:					
	West Virginia	3,595				
	Kentucky	538				
	Ohio	758				
	Total	4,891			*	4,891
231	District Regulator Structures:					
	Permanent Installations—West Virginia:					
	Charleston	5,845				
	South Charleston	724				
	Huntington	7,136				
	Kenova	422				
	Logan	478				
	Spencer	533				
	Williamson	1,293				
	Total	16,401			*	13,449
	Permanent Installations—Kentucky:					
	Ashland	2,259				
	Catlettsburg	2,186				
	Total	4,445			*	3,999
	Permanent Installations—Ohio:					
	Ironton	1,514				
	New Boston	1,286				
	Portsmouth	989				
	Total	3,792			*	3,186
	Installations to be abandoned, 1942—					
	West Virginia	6,924	27	9	66	4,570
	Installations to be abandoned, 1942—					
	Kentucky	1,849	24	6	75	1,387
	Installations to be abandoned, 1942					
	Ohio	1,551	28	10	64	993
	Total District Regulator Structures	34,962				27,584

*Ford, Bacon & Davis results accepted.

[fol. 1889] Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
232	Other Distribution Structures:					
	Permanent Installations—West Virginia:					
	Charleston	12,483	..	..	..	.....
	Huntington	9,563	..	..	..	.....
	Kenova	286	..	..	..	.....
	Williamson	6,045	..	..	..	.....
	Total	28,387	..	..	*	22,142
	Permanent Installations—Kentucky:					
	Ashland	825	..	..	..	.....
	Catlettsburg	4,095	..	..	..	.....
	Total	4,920	..	..	*	3,936
	Permanent Installations—Ohio:					
	Ironton	379	..	..	..	.....
	New Boston	3,116	..	..	..	.....
	Total	3,495	..	..	*	2,744
	Installations to be abandoned, 1942:					
	West Virginia	1,516	27	9	66	1,001
	Installations to be abandoned, 1942:					
	Kentucky	1,317	26	8	79	1,040
	Total Other Distribution Structures	39,635	..	..	..	30,863
233	Gas Receivers and District Regulators:					
	West Virginia	19,882	..	..	*	12,400
	Kentucky	11,607	..	..	*	9,281
	Ohio	8,580	..	..	*	7,293
	Total	40,069	..	..	..	30,074
234	Distribution Line Equipment:					
	Permanent Installations—West Virginia:					
	Charleston	469,725	..	..	..	.....
	South Charleston	59,429	..	..	..	.....
	Huntington	561,040	..	..	..	.....
	Kenova	52,946	..	..	..	.....
	Logan	19,527	..	..	..	.....
	Spencer	25,843	..	..	..	.....
	Williamson	41,619	..	..	..	.....
	Total	1,131,129	..	..	*	804,928

* Ford, Bacon & Davis results accepted.

[fol 1806] Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
234	Distribution Line Equipment (Continued):					
	Permanent Installations—Kentucky:					
	West Virginia:					
	Ashland	165,572				
	Catlettsburg	34,262				
	Total	199,834			*	159,868
	Permanent Installations—Ohio:					
	Ironton	130,041				
	New Boston	31,029				
	Portsmouth	24,581				
	Total	185,651			*	148,522
	Installations to be abandoned, 1942:					
	West Virginia	164,644	28	10	64	105,372
	Installations to be abandoned, 1942:					
	Kentucky	50,837	30	12	60	30,502
	Installations to be abandoned, 1942:					
	Ohio	39,751	28	10	64	25,521
	Total Distribution Line Equipment	1,708,976				1,372,773
235	Service Line Equipment:					
	Permanent Installations—West Virginia:					
	Charleston	120,685				
	South Charleston	8,418				
	Huntington	135,569				
	Kenova	12,774				
	Logan	10,086				
	Spencer	7,279				
	Williamson	23,024				
	Total	323,835			*	275,258
	Permanent Installations—Kentucky:					
	Ashland	45,985				
	Catlettsburg	19,298				
	Total	65,283			*	55,490
	Permanent Installations—Ohio:					
	Ironton	36,514				
	New Boston	17,435				
	Portsmouth	2,128				
	Total	56,077			*	47,666

*Ford, Bacon & Davis results accepted

[fol. 1891] Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
235	Service Line Equipment (Continued):					
	Installations to be abandoned, 1942:					
	West Virginia	61,575	26	8	69	42,487
	Installations to be abandoned, 1942:					
	Kentucky	25,247	28	10	64	16,158
	Installations to be abandoned, 1942:					
	Ohio	15,006	25	7	72	10,804
	Total Service Line Equipment	547,023				417,883
236,237	Meters and Meter Installations:					
	West Virginia	480,741			*	413,640
	Kentucky	137,459			*	116,841
	Ohio	116,949			*	99,400
	Orifice Meters to be abandoned, 1942:					
	West Virginia:					
	Nitro	584				
	Barboursville	254				
	Buff Lick	116				
	Total	954	19	1	95	906
	Orifice Meters to be abandoned, 1942:					
	Kentucky:					
	Louisa	242	20	2	90	219
	Total Meters and Meter Installations	742,346				631,012
239	Other Distribution System Equipment:					
	Permanent Installations—West Virginia:					
	Charleston	3,440				
	South Charleston	340				
	Huntington	2,071				
	Kenova	516				
	Logan	283				
	Spencer	348				
	Williamson	553				
	Total	7,551			*	6,417
[fol. 1892]						
239	Other Distribution System Equipment (Continued):					
	Permanent Installations—Kentucky:					
	Ashland	1,062				
	Catlettsburg	528				
	Total	1,620			*	1,377

* Ford, Bacon & Davis results accepted.

Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
	Permanent Installations—Ohio					
	Ironton	1,259				
	New Boston	497				
	Portsmouth	412				
	Total	2,168			*	1,888
	Installations to be abandoned 1942:					
	West Virginia	2,562	24	6	75	1,922
	Installations to be abandoned 1942:					
	Kentucky	1,162	24	6	75	872
	Installations to be abandoned 1942:					
	Ohio	629	26	8	69	434
	Total Other Distribution System Equipment	15,602				12,930
	Total Distribution System Property	2,268,185				2,602,097
[Fol. 1861]						
244	Land (General Office Land):					
	West Virginia	$172,350				
	Kentucky	2,150				
	Total	174,500			*	$174,500
245	Land (other General Land):					
	West Virginia	29,693				
	Kentucky	1,960				
	Total	31,653			*	31,653
247	General office Structures:					
	West Virginia	144,587			*	128,742
249	General office Equipment:					
	West Virginia	53,958			*	41,371
	Kentucky	2,430			*	1,865
	Ohio	3,971			*	2,268
	Total	60,459				45,504
251	General Store and Shop Equipment:					
	West Virginia	14,929			*	12,305
	Kentucky	1,772			*	1,462
	Ohio	1,354			*	1,152
	Total	18,055				14,919

* Ford, Bacon & Davis results accepted

Production System Property—Continued

Account number	Classification	Reproduction cost new	Life	Average age	Per cent condition	Present value
252	General Stable Equipment:					
	West Virginia	10,799	..	..	*	9,946
253	General Garage Equipment:					
	West Virginia	27,089	..	..	*	21,421
	Kentucky	710	..	..	*	497
	Ohio	799	..	..	*	619
	Total	28,598	..	..	..	22,537
255	General Telephone and Telegraph System:					
	West Virginia	184,153	26	8	69	127,066
	Kentucky	20,061	23	5	78	15,648
	Total	204,214	..	..	..	142,714

[fol. 1894]

256	General Tools and Implements:					
	West Virginia	6,473			*	5,120
	Kentucky	477	..	..	*	353
	Ohio	345	..	..	*	274
	Total	7,295	..	..	..	5,747
	Total General Property	679,140	..	..	..	576,305

[fol. 1895] United Fuel Gas Company

Estimated working capital $960,000

[fol. 1896] Hagenah Exhibit No. 2

[fol. 1897] Analysis of Report Submitted by Mr. R. E. Davis

The Valuation Theory Adopted by Mr. Davis

Mr. Ralph E. Davis has filed an exhibit entitled "Appraisal of Natural Gas Property—December 31, 1923," covering the natural gas fee and leasehold property of the United Fuel Gas Company, his conclusion being that such value on the above date was $32,478,129.

The basis adopted by him in arriving at the above conclusion is stated on page 2 of his report as follows:

The value of a property capable of producing natural gas is conceived to be measured by the prospective earning power of the property placed at its most advantageous use. To determine the value of

* Ford, Bacon & Davis results accepted.

such property it is necessary to consider the present use to which the property is placed and to compare this use with other uses available. If the present use is found to be most advantageous, the valuation will be dependent upon the prospective earning power of the property in its present use. If a more advantageous use be found available, it is necessary to determine if such use be competent to return a greater earning and the amount of such earning.

In this instance he applied the above theory on the assumption that the United Fuel Gas Company could relinquish its public utility business and more profitably dispose of its entire gas supply to the steel industry in Pittsburgh at a rate of 35 cents per thousand cubic feet, this rate being the lowest price at which a substitute service could be supplied. By a series of estimates and computations he determined the prospective profits from such natural gas sales over the 18 year estimated life of the property and, after allowing for expenses incident to such service, reduced the aggregate profit as thus developed to terms of present worth, and the amount by which the latter result exceeds the appraised value of the physical property necessary to the furnishing of such service is claimed to measure the value of the company's gas reserves.

An examination of Mr. Davis' report indicates (1) that his theory has no place in the valuation of a public utility property, and (2) that his numerous estimates and assumptions furnish no reliable basis on which the fair value of public utility property can be ascertained. This is apparent when the report is analyzed in detail. The criticism which at once suggests itself is two-fould, namely, that which goes to the method he adopted, and that which pertains to the [fol. 1898] data on which his theory is applied. These subjects are here briefly discussed.

Inapplication of Exchange Value Theory

General.

In making all of his estimates, Mr. Davis has considered only exchange value in the economic sense. This method is not recognized by public service commissions and never has been considered a factor in the appraisal of public utility properties. The economic definition of value as contained in the works of such authorities as John Stuart Mill, Jevons and Taussig recognizes, in the case of a commodity, the power of commanding other commodities in exchange, for "value" merely expresses the circumstance of exchange in a certain ratio for other commodities or services. In a natural gas rate case exchange value cannot logically be a valuation factor, since exchange value depends upon the net income, both present and prospective, and that income in turn depends on the rate to be charged, the amount of gas in the reserve and the cost of its delivery. Exchange value being dependent upon the rate, it follows that such relationship cannot be the subject of inquiry in a rate case. To base the rate upon the exchange value in this case would be merely to continue the assumed rate, and this condition would obtain so long

a such rate was not disturbed. If a change in rates affects the income, it correspondingly affects the exchange value, and if the rate can be arbitrarily fixed by the cost of supplying a competitive and substitute service, the exchange value is thereby also fixed. Courts have stated in language that admits of no misunderstanding that exchange value is not a factor in arriving at the fair value of public utility property for rate purposes. In disregarding judicial interpretation on this point, Mr. Davis assumes the correctness of one of the main factors in issue in this case, namely, the rate.

Mr. Davis has applied the exchange value theory by capitalizing the earning power of an unregulated monopoly. Having determined the cost of supplying the industrial gas service in Pittsburgh with producer gas as a substitute fuel, he capitalizes the difference between such cost and the cost of delivering natural gas in the same market as the monopoly advantage of the United Fuel Gas Company. This amounts to denying to the public all the benefits of natural gas, for if the price of the latter is to be determined on the basis of the cost of a substitute service, the public might as well have no natural [fol. 1899] gas resources. This same theory was at one time advanced by the owners of other natural resources devoted to public service, notably water power companies, railroad facilities, etc. It is the settled practice of utility commissions in rate inquiries not to consider the earning power of the utility as the basis on which to determine the value of that property for the use of which reasonable rates are to be prescribed. To adopt the earning power as the measure of value of a natural monopoly on which a reasonable return may be earned is but to reason in a circle, a fallacy which has long been recognized by regulatory bodies and rejected by state and Federal courts and the United States Supreme Court. Railroads have never received official sanction for rates based on the cost of performing the same service with a substitute facility, or on the basis of "what the traffic would bear." Owners of water powers devoted to public utility service have never been permitted to capitalize their natural resources on the basis of the total savings in such business as compared with performing the same service with steam generation facilities. There is no process of reasoning by which owners of natural gas deposits can capitalize the advantages which such natural resources provide as compared with the cost of artificial gas.

A review of Mr. Davis' report shows the extreme position which he has been forced to take in order to find support for his valuation conclusion under even the exchange theory of value. He applies his theory to conditions in both the Pittsburgh district and in other available markets as is herein set forth.

The Pittsburgh Market.

Even if we accept, for the purpose of analysis, the theory advanced by Mr. Davis, it is apparent that his statements and conclusions are not supported by the facts. The steel industry does not at this time afford the ready market for natural gas on which Mr.

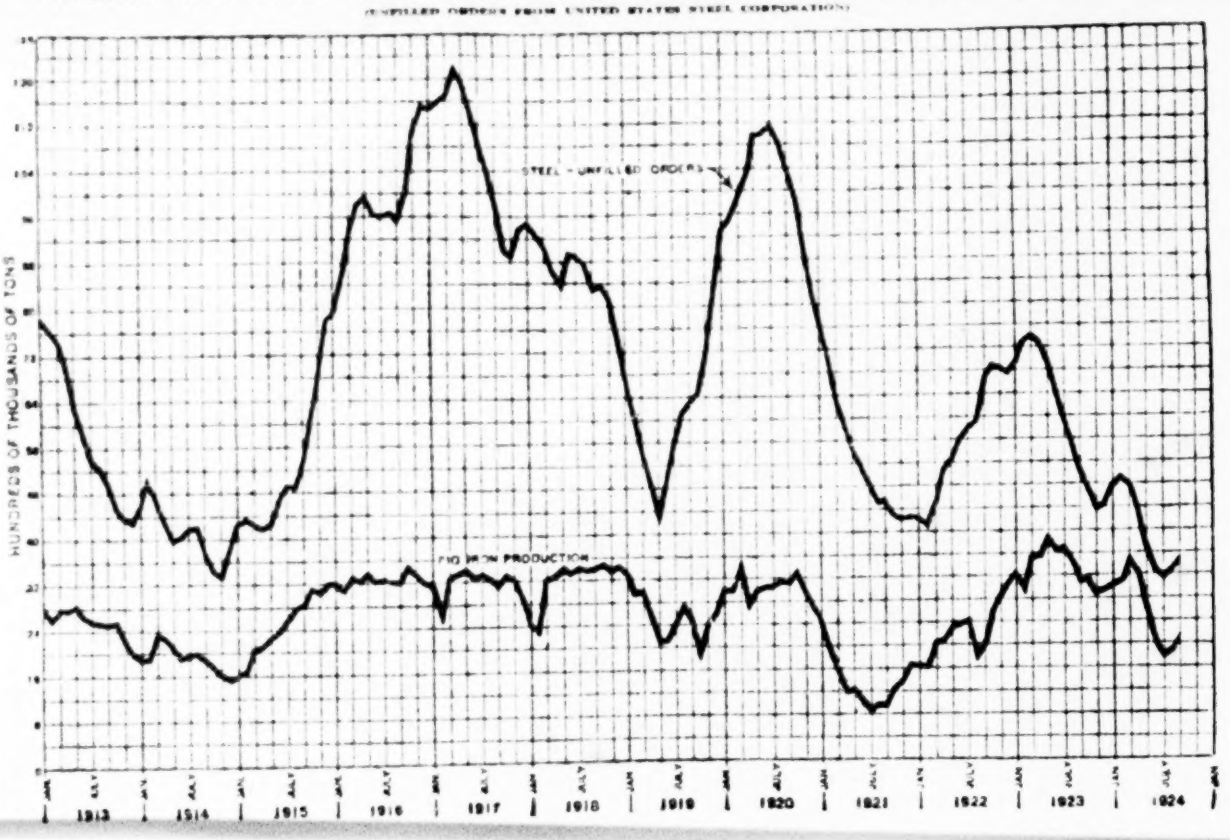
Davis predicates the enormous value above set forth. On page 8 of his report he correctly states the present situation regarding the use of natural gas in the Pittsburgh district. He says:

> We find that today the steel industry of the Pittsburgh district is emerging from the period when natural gas was largely used as a fuel and entering a period in which bituminous coal supplies the fuel requirements formerly met by natural gas. It is evident that a critical period in the use of natural gas in the steel industry of the Pittsburgh district has been reached.

The "critical period in the use of natural gas" to which Mr. Davis [fol. 1980] refers is attributed by both the steel interests and the natural gas interests to the uncertainty of the gas supply during periods of maximum residential and commercial demands and the general recognition that as between the steel industry and the latter classes of customers, the broader public interest requires that wholesale industrial consumption give way. It is a well known fact that the steel industry either operates under very profitable conditions, when it cannot afford to have its fuel supply interrupted, or is confronted with depression, when it is unable to accept the quantity of gas that could be delivered. To use Mr. Carnegie's famous phrase, the steel industry is either "prince or pauper." The maximum demand of the iron and steel industry in periods of great prosperity would exceed the capacity of the natural gas company, but would fall far below such gas capacity in the regular cycles of depression. No steel manufacturer will rely on Mr. Davis' ready assumptions and ignore the strongly defined sentiment for increasing the availability of natural gas to the public instead of confining its use to a single favored industry. This fact explains exactly why the steel industry is looking elsewhere for a reliable fuel supply and why now "bituminous coal supplies the fuel requirements formerly met with gas."

There is no uncertainty on this subject. In the natural gas rate cases now being heard before the Pennsylvania Public Service Commission in Pittsburgh it is being strongly urged by the local companies that substantial increases in rates are necessary from domestic and commercial consumers because the constant and necessary interruptions of the gas service to the steel industry have caused the loss of the latter class of business. Also they add that there is no likelihood of the gas companies ever being able to regain this business. It was the gas company officials who called attention to the decision of various units of the United States Steel Corporation to make themselves independent of natural gas and the action of the largest independent manufacturer in the Pittsburgh district, namely, Jones & Laughlin Steel Company, which is abandoning natural gas service entirely.

There is no industry in the United States subject to more frequent and wider fluctuations in the demand for its product than is the iron and steel industry. This is very important since a reasonably constant relation between supply and demand is greatly needed by both the steel industry and the gas business. If the former cannot obtain


PIG IRON PRODUCTION AND UNFILLED STEEL ORDERS AT THE END OF EACH MONTH
(UNFILLED ORDERS FROM UNITED STATES STEEL CORPORATION)
HUNDREDS OF THOUSANDS OF TONS
STEEL - UNFILLED ORDERS
PIG IRON PRODUCTION
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924

1902

fic gas when most needed, and if it is unable to take the offered sup-
fol. 1901] ply at other times, this industry is not the one on whose
continued patronage Mr. Davis can base a valuation of over $32,-
000,000 as a capitalization of prospective profits over a period of
8 years in the future. The diagram below, taken from a recent
report of the United States Department of Commerce, shows the
fluctuation in the unfilled steel orders and in pig iron production of
the United States Steel Corporation over the period from January 1,
1913, to September 1, 1924. That the fluctuations in this diagram
constitute the normal trend in the steel industry is amply borne out
when one carries the curve back to the opening of the present century.
The diagram follows:

(Here follows diagram marked side folio page 1902)

[fol. 1903] Since the range in the percentage of operated capacity
of the independent mills has been wider than that of the leading
corporation, the possibility of profitable sales of natural gas to the
steel industry as a whole is rather remote. In view of the conditions
disclosed by the above chart, Mr. Davis cannot successfully contend
that this highly fluctuating demand can be served by the United
Fuel Gas Company, both in supplying the extreme peaks and in
withholding its output in periods of depression. Even these wide
fluctuations will be exceeded in the future as a result of the recent
"Pittsburgh Plus" decision of the Federal Trade Commission, which
decision has already occasioned great activity in the expansion of the
steel producing capacity in other industrial centers to the disad-
vantage of the Pittsburgh market. Further, his arguments cannot
be reconciled with the above statements of the natural gas companies
in Pittsburgh which are diametrically opposed to his basic assump-
tions. If Mr. Davis' assumptions are right, the natural gas com-
panies supplying the Pittsburgh district are overlooking a splendid
opportunity at their very doors. If their testimony that they have
lost the steel market in their immediate communities is correct and
also that they can never regain it, there is nothing in Mr. Davis' re-
port to show that he could supply gas in Pittsburgh under more
favorable and more permanent conditions. They cannot both be
right. This situation fully justifies and explains the following
quotation from Mr. Davis' report, page 7:

The art of using coal for steel manufacture is now highly de-
veloped. Where the fuel is required in gaseous form, the coal is
converted into gas either in a producer plant or as a by-product in
the coking plant. This has developed a condition in the steel in-
dustry in which natural gas competes as a fuel with bituminous coal
under circumstances in which the coal is most efficiently used.

Since natural gas can be supplied more cheaply than artificial gas,
it is pertinent to inquire as to who is entitled to all the benefits from
the savings or wealth growing out of the development of these gas

fields. In fixing the value of other developed natural gas resources, commissions have found it proper to give the public some share in these benefits. Mr. Davis does not mention this obligation. In the instances where the public has been given a share in the resulting savings, the commissions have sought to determine a reasonable basis for such segregation. In this instance, if the company has the right to sell its gas in Pittsburgh on the basis of the cost of supplying an artificial substitute service, it is also entitled to keep all the benefits growing out of its legal powers. If it has not the right to capitalize [fol. 1984] its property values on the above basis and the West Virginia commission has the right to fix a lower price, then the commission also has the right to determine the basis for apportioning the benefits growing out of the company's monopoly position.

The state of West Virginia has given the United Fuel Gas Company, under its status as a public utility, some rights and privileges which have enabled it as the owner of these valuable natural resources to procure their development and the sale of their product on a satisfactory basis, for the law which imposes responsibilities also confers great monopoly privileges to public utilities. There is no foundation for assuming that, having been given valuable property rights by the public, this company is now possessed of the right to charge as much for its product as the next available substitute for that service would cost. Such a proposition requires strong and convincing legal proof before it can be accepted. If the United Fuel Gas Company is a public utility to the extent that it may seek the aid of the Public Service Commission of West Virginia in an application for increased rates it cannot capitalize its gas reserves for rate-making purposes on the basis of an unregulated monopoly. Its very appearance in this case is a rejection of the theory on which Mr. Davis has proceeded. It is asking this commission to permit it as a public utility to earn a reasonable return on a valuation which can only be defined as the capitalization of a monopoly power outside of and beyond regulation by the public.

It is therefore obvious that the alleged value of the gas reserves depends on whether the company has a right to sell its product at the substitute fuel cost, with a proper return computed upon the capital invested in distribution to the market in question. If the United Fuel Gas Company has that right, the theory presented must be accepted and there remains only the question of whether it can properly be applied and the basic data estimated with reasonable accuracy. If the company has no such right, the theory and all that is based on it falls to the ground.

If the Public Service Commission of West Virginia has the right to fix a selling price to be charged by this company below the estimated cost of furnishing the same service with an artificial substitute, it can reasonably affect the value of the gas reserves. If it should reduce the selling price of gas so that the profit which Mr. Davis assumes is greatly reduced, the value of the gas reserves would be correspondingly reduced. Stating the matter in another form, the [fol. 1985] value of the gas reserves as determined by Mr. Davis depends upon the price which the company is entitled to receive

for its gas. If it is entitled to receive a high rate, the value of the gas source is thereby enhanced; if, on the other hand, the company is not entitled to charge 35 cents per thousand cubic feet for its product, but may be required to sell it at a materially lower sum, the estimated value of over $32,000,000 diminishes as the profit is reduced. Under the exchange theory the selling price determined by him at once fixed the value of the gas reserves and the entire matter depends on whether the company has the right to sell its product at the cost of supplying a substitute service. There is nothing in Mr. Davis' report to show that the company has such rights; he merely assumes it and by the necessary additional assumptions removes every obstacle to the application of his theory.

Other Available Markets

Possibly the fatal defect in the theory applied in the above instance was recognized by Mr. Davis, for he has also sought to justify his computed wholesale rate of 35 cents per thousand cubic feet by the fact that the United Fuel Gas Company's transmission system is advantageously located for the furnishing of wholesale service to other companies. The following extract is taken from page 9 of his report:

The transmission system of the United Fuel Gas Company is now connected with the lines of various other companies through which gas may be delivered to the principal natural gas markets of the Ohio Valley. At comparatively small expense connections with the lines of additional companies having large markets can be made. This situation is sufficiently strategic to enable the United Fuel Gas Company to command for its gas supply, once the limitations of existing contracts have expired, the maximum value of its gas supply. This situation is sufficiently real to make it unnecessary for the United Fuel Gas Company to undertake the actual construction of lines to the Pittsburgh district, as it will shortly be able to command a price at Colarville or elsewhere which will neutralize the advantage of a direct market in Pittsburgh.

The above quotation can only mean that because of the higher rates which the regulatory authorities in remote centers now supplied by natural gas from West Virginia have seen fit to grant because of the much higher cost of coal and artificial gas in such communities, this company may capitalize the profit from such rates to enforce a demand for higher rates from the cities near the fields. This is merely another form of applying exchange value as above explained. However, if such a course were proper, an increase in rates granted by the authorities in Ohio and Pennsylvania would be a lever for increasing rates in West Virginia, and when the latter increase had been obtained, they in turn would serve to establish a valuation on which higher rates would be demanded in Ohio and Pennsylvania. In practice this means that a rate increase granted in one city would compel an equal or higher rate in every other city in order to attract its necessary gas supply. The history

of natural gas rate increases indicates the operation of just such a vicious circle as is above described.

Adopting the thought of the Public Service Commission of New York in a case wherein it rejected the exchange value as furnishing a means for determining the fair value of a natural resource, and substituting in its statement the facts peculiar to this company, the entire issue is expressed in the following language:

> It may very well be that this company is entitled in view of all the circumstances of the case, to a liberal return upon the capital actually invested in developing the gas fields. It may very well be that the people exploiting this enterprise are entitled to large, and even very large, profits for the skill they have displayed and the risk to which they have subjected their capital. It may be that the public ought to pay them very liberally for the work which they have carried on in the public interest, but to say that the people of West Virginia are entitled to no advantage from the development of the natural gas wealth of that state, that the territory especially favored through the location of these resources, has no advantage and is entitled to no benefit by reason of its proximity thereto is to say something which does not appeal to the best judgment of mankind for an instant.

Estimates and Assumptions Relied on by Mr. Davis

The foregoing discussion has dealt with the exchange theory of value adopted by Mr. Davis in his appraisal of the company's gas reserves and an analysis of that theory showing why it cannot apply in the valuation of public utility property. Assuming, however, for the purpose of further analysis, the correctness on the above theory, a study of his supporting data also shows that the result which Mr. Davis reached is founded on estimates and assumptions that cannot be sustained.

In the application of the exchange theory, Mr. Davis disregards the company's present operating conditions, its earnings and its operating expenses, and relies on estimates and assumptions pertaining not only to the nature of the service and its cost, but also regarding questions of policy, management and economic development over the life of the present gas reserves. His appraisal is not based on [fol. 1867] present facts, but is a hypothetical study, highly speculative, and founded on a large number of assumptions, estimates and opinions, a variation in any one of which would seriously affect, if not entirely upset, the conclusions reached. All these estimates and assumptions are but his personal opinions in respect to which other men equally well informed might easily differ, and to the extent that they did so the conclusions would be materially altered. His conclusions would be seriously disturbed by the moderate changes in costs produced by the frequent minor business cycles, while the changes in costs produced by the major cyclical movements would utterly destroy any conclusions founded on such concepts as Mr. Davis has assumed. It would be as easy, and probably more ac-

urate, to estimate on his own theory the value of the reserves outright as to prepare his involved series of estimates, the $32,000,000 conclusion from which is supported only so long as the various items in the tables maintain a specific and continuing relationship to one another. The unreasonableness of his estimates and assumptions stands out when an analysis is made of the several steps which he took in arriving at the conclusion above set forth. These steps are as follows:

a. Estimated the value of natural gas for steel making in Pittsburgh.

b. Estimated the cost of transporting gas between Pittsburgh and company's present station at Cedarville.

c. Estimated the net value of gas at Cedarville.

d. Estimated the present worth of prospective profits based on estimated future production delivered at Cedarville over period of 18 years.

e. Estimated value of gas reserves as distinct from other operating property.

The unreasonableness and highly speculative character of Mr. Davis' estimates for each of the 18 years in the future is illustrated in the following table which sets forth for a single year (1924) the estimates relied on to support his conclusions.

(Col. 1908) A. Estimated Cost per M Cubic Feet

		Cents per M cubic feet
Estimated value of natural gas in Pittsburgh in competition with hot producer gas		33.250
Estimated cost of transmitting gas between Cedarville and Pittsburgh		5.260
Value of gas at Cedarville		27.990
Estimated cost of new wells assumed necessary	2.895	
Cost of producing, transmission and prospecting	8.250	
		11.145
Net value of gas		16.845

B. Value Claimed for Gas Reserves Based on Estimated Value of Gas per M Cubic Feet

Estimated life of gas reserves		18 years
Estimated sales for 18 years		
Estimated production, billion cubic feet	636.1	
Gas purchased, billion cubic feet	38.6	
Total		674.7

	Cents per M cubic feet
Prospective net income for 18 years	$91,792,884
Present worth of above on 8% compound discount basis	56,582,799
Deduct estimated Federal income taxes for 18 years	4,401,261
Market value of total property involved	52,181,538
Less Mr. Uebelacher's appraised value of physical property necessary to serve Pittsburg market	19,723,409
Value of natural gas fee and leasehold property	32,458,129

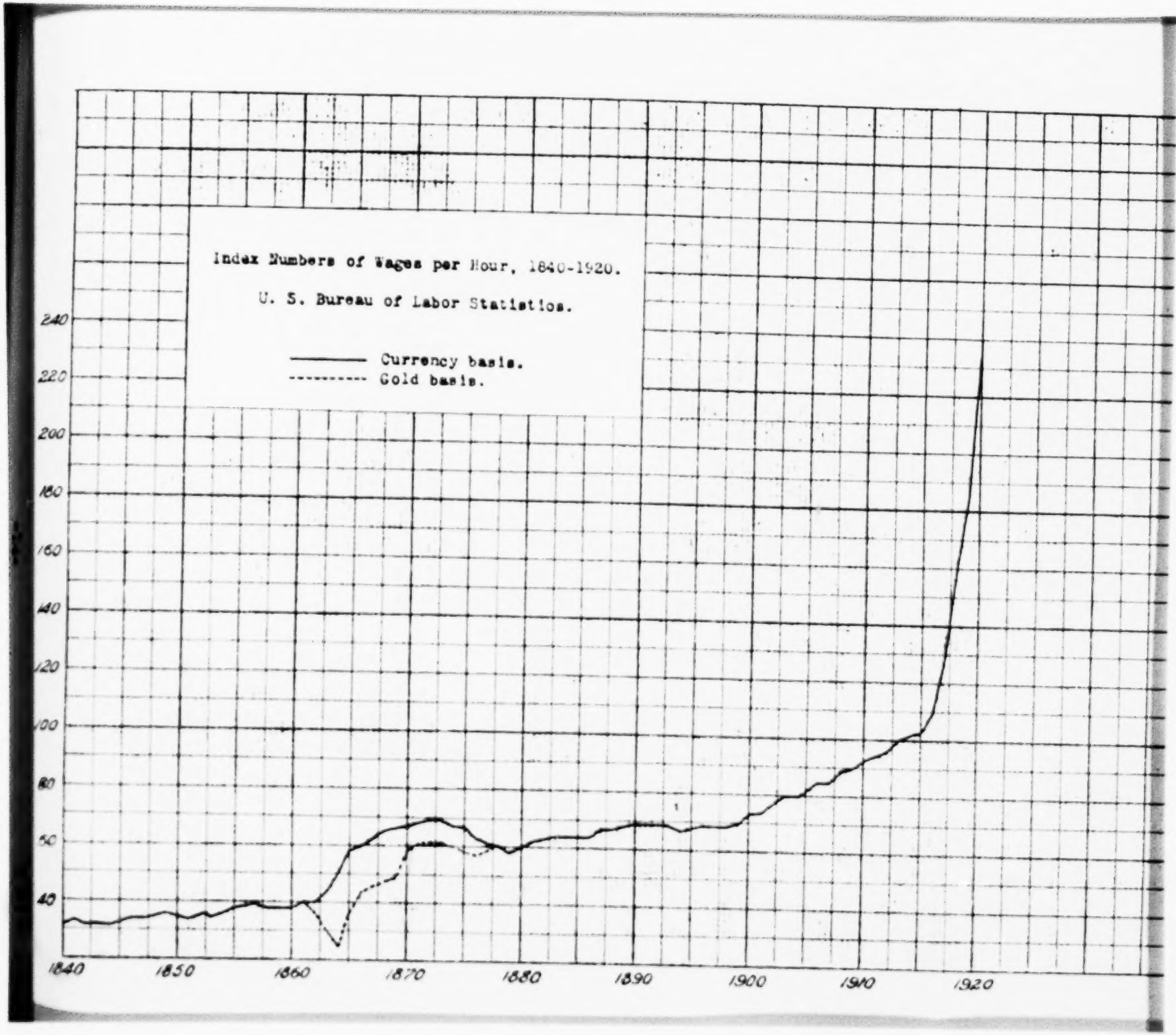
The above several steps and their unrelated character are discussed below.

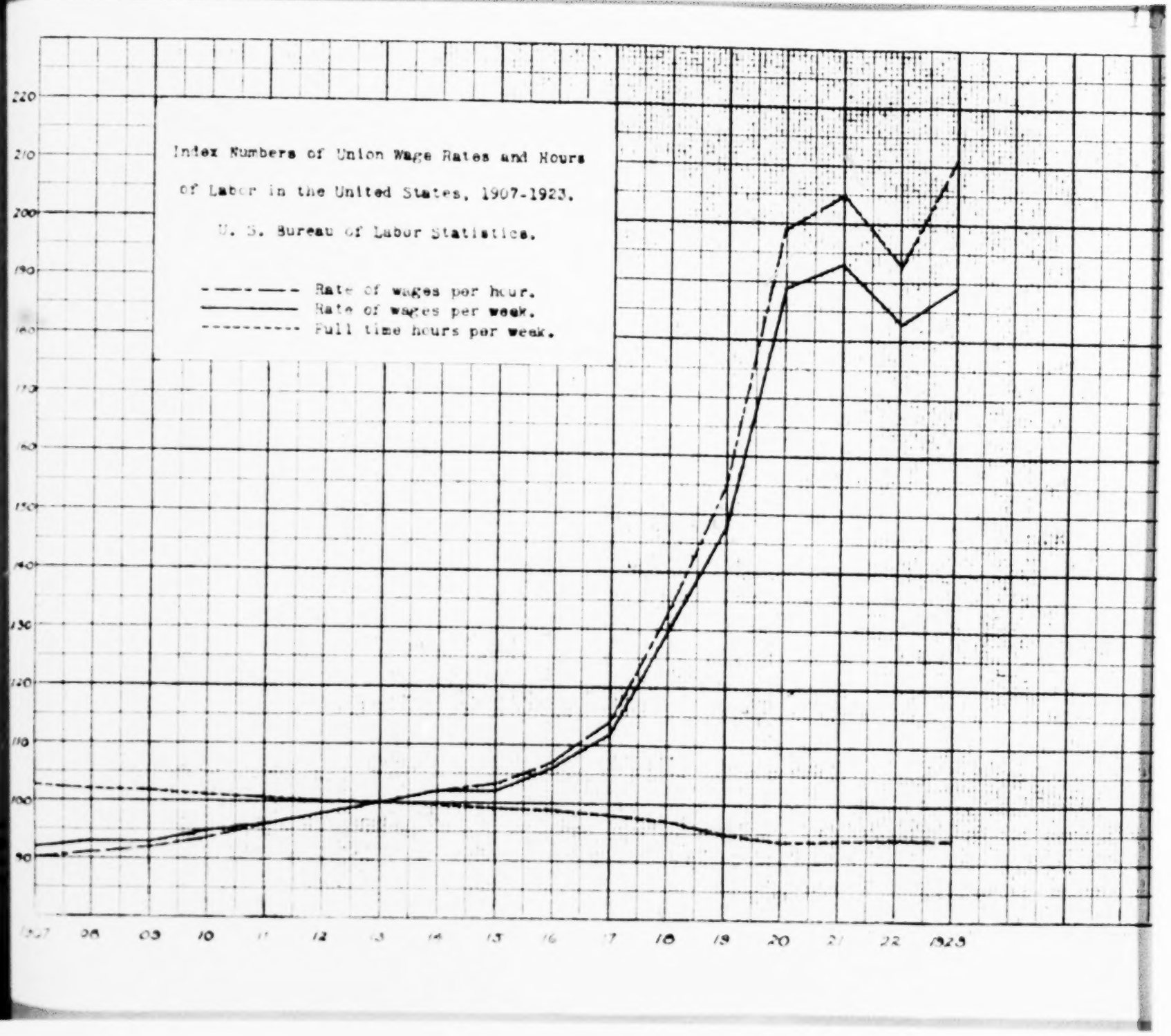
Estimated Value of Natural Gas for Steel Making in Pittsburgh Market.

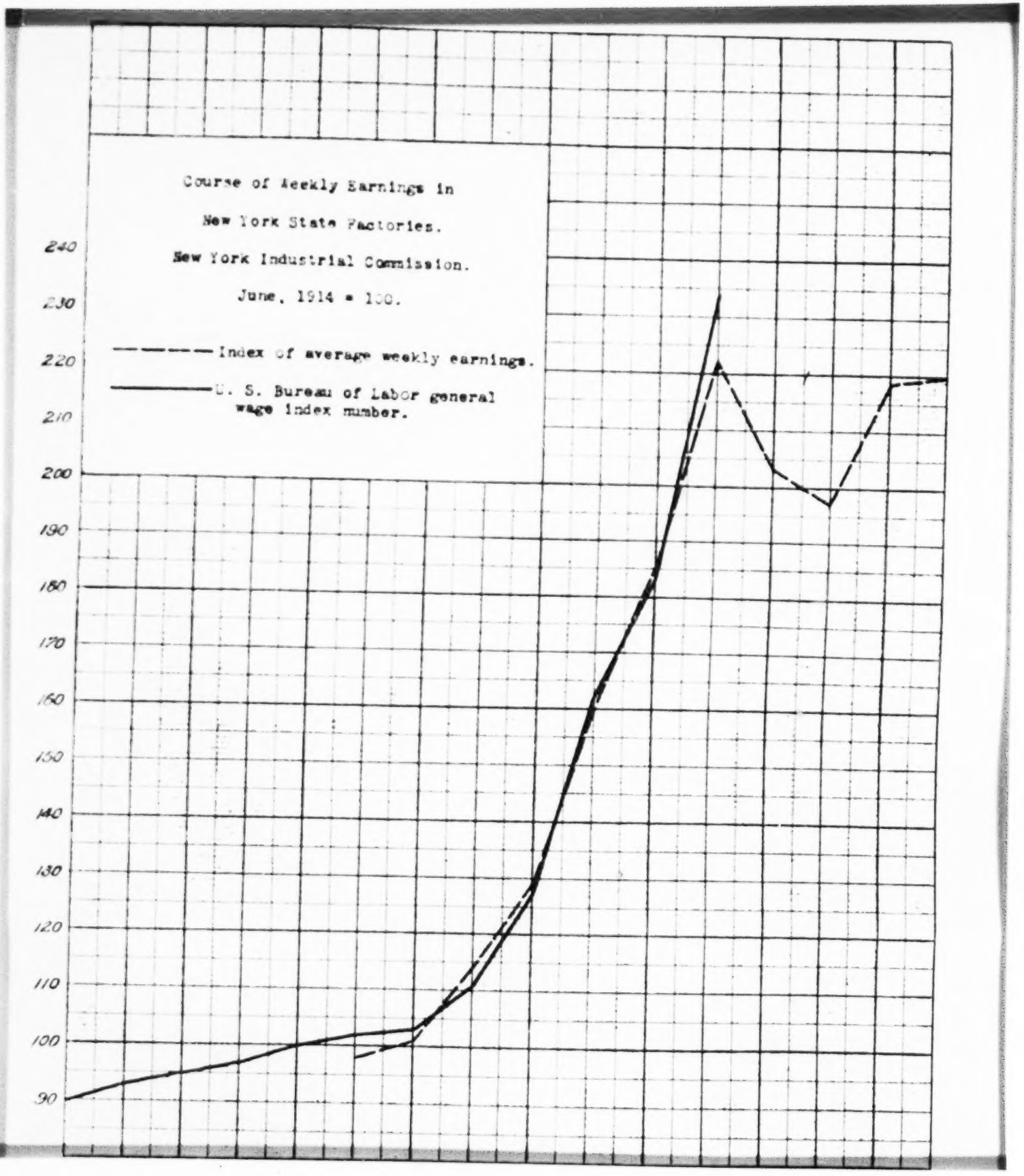
Mr. Davis finds that the company's product is worth 55 cents per thousand cubic feet in Pittsburgh because that rate measures the cost of supplying the same service with artificial gas produced from coal. This conclusion is reached from a comparative study in which he estimated the cost of a particular producer plant of a certain size and capacity, assumed a certain rate of gas production and labor efficiency and assumed the price of coal and other operating supplies, salaries and wages, specific steam and gas-making qualities of the coal used, cost of repairs, depreciation and interest, and the relative heating qualities of natural gas and such artificial gas. His estimates presuppose that there will be no material change in the [fol. 1969] level of labor and material prices over the next 18 years. Any changes in these estimates would seriously affect the value of the gas reserves on his basis. His theory also presupposes the abandonment of that part of the gas company's present physical property that would not be adapted for use if the entire output of the company were delivered in the Pittsburgh market. Mr. Davis makes no allowance in his cost study for the losses growing out of the abandonment of such property as would not be necessary if the entire output were delivered in Pittsburgh, such property being appraised by Uebelacher in excess of $12,000,000.

The unreasonableness of the more important estimates embraced in his computations is shown by a study of the present fuel market and the level of wages and labor costs which now obtains. The likelihood of lower prices for coal and the conditions which will favor such reduction are discussed in a separate memorandum, it being evident from such study that numerous influences are contributing to bring about a lower level of prices in the bituminous coal industry, and that the price level accepted for this commodity by Mr. Davis is wrong. Moreover, this estimate is one of the vital factors on which his appraisal result is predicated.

Again, note the enormous increases that have taken place in wage


Index Numbers of Wages per Hour, 1840-1920.
U. S. Bureau of Labor Statistics.
Currency basis.
Gold basis.
240
220
200
180
160
140
120
100
80
60
40
1840
1850
1860
1870
1880
1890
1900
1910
1920


Index Numbers of Union Wage Rates and Hours of Labor in the United States, 1907-1923.
U. S. Bureau of Labor Statistics.
Rate of wages per hour.
Rate of wages per week.
Full time hours per week.
220
210
200
190
180
170
160
150
140
130
120
110
100
90
1907
08
09
10
11
12
13
14
15
16
17
18
19
20
21
22
1923


Course of Weekly Earnings in
New York State Factories.
New York Industrial Commission.
June, 1914 = 100.
Index of average weekly earnings.
U. S. Bureau of Labor general wage index number.
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90

scales as a result of the war and which rates have not yet been adjusted to a stable business basis. The following table, compiled by the United States Bureau of Labor, shows wages to be at this time at the highest point in history:

Index Numbers of Union Wage Rates and Hours of Labor in the United States as of May Each Year, 1907 to 1923

(1913=100.0)

Year	Index number of		
	Rate of wages per hour	Full time, hours per week	Rate of wages per week, full time
1907	89.7	102.6	91.5
1908	91.0	102.1	92.5
1909	91.9	101.9	93.3
1910	94.4	101.1	95.2
1911	96.0	100.7	96.5
1912	97.6	100.3	97.7
1913	100.0	100.0	100.0
1914	101.9	99.6	101.6
1915	102.8	99.4	102.3
1916	107.2	98.8	106.2
1917	114.1	98.4	112.4
1918	132.7	97.1	129.6
1919	154.5	94.7	147.8
1920	199.0	93.8	188.5
1921	205.3	92.9	193.3
1922	193.1	94.4	183.0
1923	210.6	94.3	198.6

The following tables, based on data contained in the reports of the United States Bureau of Labor and the New York Industrial Commission, show the huge wage increases in graphic form:

(Here follow diagrams marked side folio pages 1910, 1911, and 1912.)

[fol. 1913] The above tables show the changes in the labor markets brought about by war and postwar conditions and it is this level of wages on which Mr. Davis bases his labor costs for 18 years in the future. Any study of the conditions which brought about this cost level and which have for some years operated to sustain it can only lead to the conclusion that the process of readjustment which economic forces are now compelling will be accompanied by declining labor costs. Every series of international conflicts has brought about great increases in wages, and the history of the last century records two instances where the same violent increases in wages occurred as have been witnessed since 1917. The same history, however, records that following such wars and in the inevitable readjustment which peace makes necessary, there was a gradual de-

cline in commodity prices and labor costs, the latter being accomplished in many instances through inventions and high speed machinery. In all major down-swings in modern economic history, wage scales have remained more or less unchanged, but labor costs as a result of both wage adjustments and increased labor performance have tended strongly downward in a manner not unlike that reflected in the declining tendency in commodity prices. To assume that the level of labor costs and prices which prevailed in December, 1924, furnishes a reliable basis for estimating costs for 18 years in the future is so contrary to the experience recorded by industrial history as to render any conclusion based thereon of little value.

Estimated Cost of Transporting Gas Between Pittsburgh and Cedarville

This item represents the estimated costs which would be incurred by the United Fuel Gas Company in delivering gas from its present wholesale station at Cedarville to the steel industry in Pittsburgh. It is purely an estimate of the operating expenses and fixed charges for interest and depreciation on the plant extensions which would be needed in this service were the assumption that the total output is to be sold in Pittsburgh carried out. These costs do not pertain to the present operations of the company, but reflect the probable cost of furnishing service with a different plant and supplying gas at a single point on a wholesale scale not now possible. Mr. Davis' theory also contemplates the abandonment or sale of that part of the company's present plant and equipment which would not be useful in supplying the service on which his appraisal is based, but he makes no allowance in his numerous estimates for the loss which [fol. 1914] would be sustained by reason of such sale or abandonment of property.

Estimated Net Value of Gas at Cedarville

In arriving at the margin of profit to be capitalized as the measure of value, Mr. Davis deducted from his estimated value of the gas in Pittsburgh the above estimated cost of transporting gas between Pittsburgh and Cedarville and concludes that the difference represents the net value of the gas at the latter point. It will be noted that this conclusion is not based on the present costs incurred by the company in producing and delivering gas at Cedarville. Moreover, he made many additional estimates, for from the estimated cost of the gas at Cedarville as thus determined, he deducted the estimated expense to be incurred by the company each year in prospecting, producing and distributing gas to Cedarville for transportation to Pittsburgh, and he also estimated the cost of bringing in necessary additional wells. As to the latter item, he estimated the number of wells that will be constructed each year for the next 18 years and the cost of such wells, their life and their production, the number of dry holes that will be encountered, and further estimated what will be the yearly rate of development of the field over such estimated life. In this connection he assumed that the cost of well drilling

will always remain the same and that the ratio of dry holes to producing wells will never be different than the ratio found last year. The sum of these various estimates he regards as the cost of producing and supplying gas at Cedarville, and the difference between such costs and the net value of gas at that point, as previously determined, is regarded as the net value of the gas to be capitalized. This conclusion therefore represents the maximum value which Mr. Davis is able to ascertain for the natural gas in competition with artificial gas and, consequently, reflects the monopoly or exchange value of the property. It has no connection with the actual costs incurred by the company in producing and delivering the service at the point in question.

Present Worth of Prospective Profits Based on Estimated Future Sales.

The net value of the gas as thus determined is computed by Mr. Davis for each year over the life of the fields and multiplied by the estimated sales for such years, the aggregate gross income over the 18 year period being placed at $80,592,894. To this amount Mr. Davis applies an 8 per cent compound discount factor, reducing the income to terms of present worth, or $56,582,790.93. Deducting [fol. 1915] from the latter amount the federal income taxes ($4,401,261.76), which Mr. Davis estimates the company will be required to pay over the next 18 years, he accepts the result as the value of the hypothetical plant set up to serve the Pittsburgh market. This value is said to be $52,181,538.17.

Estimated Value of Gas Fee and Leasehold Property.

Since the above total of $52,181,538.17 is the exchange value of the entire property, Mr. Davis deducted therefrom the appraised present value of the plant and equipment necessary in the production and delivery of the entire output of gas to the Pittsburgh district. This property was appraised at $19,723,408. Deducting this amount from the above total leaves the $32,458,129.17 which it is claimed measures the value of the fee and leasehold property.

Conclusion.

The sum of $32,458,129 as developed by Mr. Davis, does not measure the present value of the gas fee and leasehold property. It was arrived at through the application of a theory that has no place in the appraisal of utility property. The recognition of the right to regulate eliminates the very factor which Mr. Davis sought to capitalize. On pages 2 and 3 of his report, Mr. Davis, by way of justifying his use of the exchange theory of value, states that it has long been relied on by engineers in appraising mining properties and that it has also been accepted as evidence of value in taxation matters. In both respects he is right, but the significance thereof is lost when it is considered that we are not dealing with questions of open market sale value or of taxable worth. In those instances where

the exchange theory has been applied, the property was subject to the law of supply and demand. The right to fix rates carries with it the power to affect open market values, but the fair value of utility property cannot be predicated on the rate that is in issue. Mr. Davis has reasoned in a circle.

However, even if the exchange theory could properly be considered in the appraisal of natural gas fee and leasehold lands, the absence of reliable data on which to support it would leave any conclusion derived therefrom without practical worth. A valuation theory by which property recently acquired for approximately $6,000,000 can be shown to have a present fair value of over $32,000,000 must be supported by more accurate information than a [fol. 1916] series of more or less unrelated personal opinions and estimates, each of which may be the subject of extensive controversy. The conclusion reached by Mr. Davis is erroneous because it lacks economic and legal sanction for the basis on which it is founded, and because it has been developed through a series of estimates unrelated to present operations and costs and too speculative to be convincing.

[fol. 1917] HAGENAH EXHIBIT No. 3

[fol. 1918] Mr. Ralph E. Davis, testifying on behalf of the United Fuel Gas Company, submitted an appraisal report covering the natural gas fee and leasehold property of that company as of December 31, 1923, the valuation arrived at being $32,458,129. This conclusion was reached by capitalizing the savings from the use of natural gas, as compared with producer gas, when sold in the Pittsburgh district at a rate of 35 cents per thousand cubic feet. The cost of the producer gas was determined by a series of estimates, including an estimated cost of screened gas coal, such as is used in the manufacture of producer gas, at a rate of $4.00 per ton, delivered in the Pittsburgh market. As the estimated life of the appraised gas reserves was placed at 18 years, Mr. Davis' estimate involves the assumption that the above price per ton will be unchanged over this period. Should the market price of coal tend downward over the next 18 years, the cost of producer gas would also decline, and with it the margin in favor of natural gas as estimated by Mr. Davis. On the basis which he adopted, this would result in a substantial reduction in the appraised value of the property in question.

The assumption that the market price of coal will be stabilized on the December 31, 1923, price level is not supported by the history of the bituminous coal industry, nor by the conditions which now prevail regarding the supply and demand for this fuel. Limitation of space prevents a review of all the material factors which operated to establish the price of $4.00 per ton as a fair cost on the date indicated. It can, however, be stated that the above price will not obtain over the period in question and that economic forces are operating to bring about greater stability in production, reduction in operating costs,

and improved methods of distribution, with a corresponding reduction in prices. The factors contributing to the downward movement in the price of coal are briefly reviewed in this memorandum.

Historical

Before analyzing the competitive factors which operate so strongly to affect the market price of coal, a brief survey of the recent history of this industry is necessary. Prior to the outbreak of the war in 1914, the industry had expanded at a greater rate than was required by the business needs of the country. The business was unstable, growing non-union fields furnished severe competition, and the wholesale price of coal varied only a few cents from year to year. The World War, for a time, arrested these competitive forces. With [fol. 1919] the extraordinary war demand for coal, prices rose enormously, stimulating increased development and the opening of many new mines. Wages advanced rapidly and a substantial parity between union and non-union fields seemed to be realized.

With the collapse of the war demand, the old competitive forces reappeared and the industry again became unstable. After the strike of 1919, consumers held very low stocks, and a combination of a railway strike among switchmen and an unusual export demand caused abnormal prices. Union wages were advanced by award and through demands to $7.50 per day. In the following year of depression, consumption decreased and consumers, already heavily stocked, could not be persuaded to buy coal for storage. Prices thereupon dropped, mines were closed, and part time operation ensued. Wage cuts, begun in April, 1921, had extended to all non-union fields by the end of the year. These reductions carried wages back to the 1919 level, and later in some non-union districts to even the 1917 rates. Non-union labor costs were reduced and business again began to be diverted from union to non-union fields. This pressure of non-union coal was especially keen in the case of those union fields that lay close to non-union fields and were shipping into the same market.

The union operators demanded drastic wage reductions, but the miners claimed that working time had decreased and the high rate had yielded less than living wages. Lowering union wages, however, would not remove the unequal competition between the union operator with fixed labor costs and the non-union operator with flexible labor costs. It was recognized that any level to which union wages might have been reduced by agreement could have been met by the non-union operator. With the inevitable strike, the price of coal rose in 1922 so that the union operator could afford to pay the wage rate demanded. Non-union coal poured into the normal union market during the strike, and the union operators were anxious to settle their labor problems and to enjoy the temporary favorable market that existed late in 1922 and early in 1923. For nine months after the settlement, the shortage created by the strike removed all difficulty in the way of paying the union scale. With the overproduction of

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The assumption that the market price of coal will be stabilized on the December 31, 1923, price level is not supported by the history of the bituminous coal industry nor by the conditions which now prevail regarding the supply and demand for this fuel. Limitation of space prevents a review of all the material factors which operated to establish the price of $4.80 per ton as a fair cost on the date indicated. It can, however, be stated that the above price will not obtain over the period in question and that economic forces are operating to bring about greater stability in production, reduction in operating costs,

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coal and the tendency of the non-union operator to reduce prices, an insurmountable obstacle to negotiations had been raised in 1920 and again in 1922. Affairs were allowed to drift to a break, because a break would increase prices and hence simplify the work of settlement. At the present time union wage agreements have been made, but there is dullness in the market, declining prices, part time em- [fol. 1920] ployment, closing of mines, a tendency for diversion of business to low-cost non-union fields, and a growing desire to seek relief from the inflexible union scale.

From now on the union mines will play a less important part as the capacity of the southern non-union mines has increased materially during the past two years. In 1922, these mines were able to produce approximately 60 per cent of the country's coal requirements, while in 1924 they could produce 75 per cent. The frenzied scramble for coal, so noticeable in the crisis of 1922, will be much less evident after 1924, unless future years chronicle a combination of strikes such as occurred recently when the miners struck in both the anthracite and bituminous fields at the same time the railway shopmen's strike prevented shipments of coal from non-union areas. The coal situation is settling down to the dead level which prevailed prior to the war, but today the railroad situation is much stronger, the non-union capacity is proportionately greater, and the competition of substitutes is assuming formidable proportions. With this historical background, the price-lowering factors will be discussed at greater length.

Overdevelopment of the Industry

Excess capacity is an outstanding fact in the bituminous coal industry and the resulting competition is driving the price of coal downward. This overdevelopment has been especially pronounced since 1914. Whereas the maximum annual demand for bituminous coal as measured by production was 579,000,000 tons in 1918, and for the five years 1917 to 1921, inclusive, averaged 516,000,000 tons, the mines are manned and equipped to produce from 700,000,000 tons, at the lowest estimate, to over 800,000,000 tons per year. For only brief intervals each year are the mines operated at their maximum capacity, the greater part of each year being spent in part-time operations. With the introduction of more modern machinery and operating methods, the efficiency of which have been amply demonstrated, the capacity of the present mines will be even greater. There is a present estimated excess of mine labor of from 150,000 to 200,000 men.

The above rapid expansion of capacity has proceeded through the extension of old mines and the addition of many new mines. Railroads tapping the coal fields have competed for tonnage from new mines, and by rate adjustments have expanded the markets for these [fol. 1921] new operators. The rules in effect governing the distribution of coal cars among the mines have also encouraged overdevelopment, for, by dividing the cars according to capacity to produce, these rules have put a premium on overcapacity. Large consumers

have bought coal lands and opened their own mines. Prior to 1916 the periodic strike in the organized fields contributed to this overdevelopment, strikes or threats of a tie-up coming with such regularity that their effect was anticipated and consumers, especially railroads, bought heavily in advance. This meant seasons of very active demand, which encouraged the development of new mines. Whenever such strikes were of more than usual severity, the non-union fields were greatly developed to meet the added demand for coal.

The extent of the overexpansion of the industry, the number of men employed, and the average days lost per year for the period from 1900 to 1921, are shown in the following table:

Year	Number of employees	Net ton production (mill. tons)	Estimated capacity (mill. tons)	Average days lost per year
1900	304,375	212	270	74
1905	460,629	315	457	97
1910	555,353	417	580	91
1915	557,456	442	674	105
1920	639,547	568	796	88
1921	663,754	415	836	159

With mining capacity and men to produce at least 24 per cent more soft coal than is required at peak demand and nearly twice the normal demand, there is an inevitable idleness of mines, which intensifies competition for business at all periods except during great business activity. The great majority of mines endeavor to remain in operation in off seasons in order to keep down their fixed charges per ton of output. This potential supply often double the market demand, results in severe competition and the price of coal under such conditions approaches the cost of production of the richer and more favorably located mines while others operate at cost or at a loss. This condition can influence prices in only one way and that is downward.

Relative Development of Union and Non-union Fields

Because of the overexpansion of the industry and the fact that there is now, and for a considerable period will be, a great surplus of [fol. 1922] men in the coal mining occupation, the future competition between union and non-union territory will be intense, with mine cutting a frequent occurrence. The non-union mines have lower labor costs, and a flexible wage scale that can be adjusted to market needs, and consequently they have expanded rapidly during the periods of strikes in the union fields. Extensive information is available showing in convincing manner the advantages possessed by the non-union operators and explaining why their rapid expansion led to the further unsettling of the industry, but only a few leading factors will be reviewed here.

A ten year average shows that in the non-union fields the workers have averaged approximately 55 days more of productive employment per year than in the union fields. This greater stability of em-

ployment, coupled with a lower and more flexible wage scale, reduces costs in the non-union fields and serves to promote still more the development of such mines. In the matter of wages alone, there is a wide differential. Outside men in non-union fields average $1.75 per day less than in the union fields. Inside union men average from $7.25 to $7.75 per day, while the majority of non-union employes are paid between $5.00 and $6.00 per day. There is a similar wide variation between wages of union and non-union pick miners and loaders. As union mine costs are higher, the development of more non-union mines is encouraged, thereby adding to the already overdevelopment of the industry, increasing the irregularity of employment, and further unbalancing the industry. No comprehensive solution of this problem has yet been offered.

Considered from the standpoint of wages, production and overhead charges, it is evident that the non-union operator possesses a material advantage which will turn an increasing proportion of the business to non-union fields. The economic factor that produced the instability in the past will be exceedingly difficult to control in the future because of the keener competition. If union wage rates are not adjusted, the non-union mines will command most of the business; if the unions sanction an adjustment in the existing wage scale, the reduction will have to be a material one in order to undercut the non-union rate. However, when union wage rates are lowered, it is more than likely that corresponding reductions will be made in non-union areas. To secure a fair share of the output, the unions must accept a wage scale comparable with that of the non-union miners. This means lower wages and greater production per man. Even with these [fol. 1923] concessions, the unions have no assurance that the non-union areas will not make still further reductions. The growing competition in this field can have only one result, namely, a driving down of costs, a narrowing margin of profit, and lower prices to the public.

The Railroads as Affecting Coal Prices

Freight Rates

Favorable freight rates have been a great factor in the past in the over-development of the coal industry, and there is nothing in present railroad tariff history to indicate a change in policy. In their efforts to develop additional traffic, railroads have offered exceedingly advantageous rates to operators who opened new coal mines, many of which were in non-union territory. An example of a rate differential that favors the outlying non-union territory is shown in the tariff to Toledo from five competitive points:

District	Distance to Toledo	Rate per ton	Length of a ton haul per dollar of freight
Pittsburgh, Pennsylvania	280 Miles	$2.39	117 Miles
Fairmont, West Virginia	340 "	2.39	142 "
Kanawha, West Virginia	338 "	2.39	141 "
Harlan, Kentucky	436 "	2.39	182 "
Oakdale, Tennessee	462 "	2.59	192 "

The same rate per ton applies to four districts having a mileage range from 280 miles to 436 miles. The advantage possessed by the non-union fields is shown by the fact that the rate per ton is the same, although the length of a ton haul per dollar of freight paid varied from 117 miles to 182 miles. The differential favored the newer fields in West Virginia, Tennessee and Kentucky. Favorable differentials to outlying districts bring more mines into competition, and thus tend to burden the industry with excess production capacity, labor and invested capital.

Improved Transportation Facilities

The recent improvement in trackage and equipment of the railroads removes a price raising factor which at times in the past contributed materially to increased coal prices. The physical recovery of the nation's carriers since early in 1922 places the coal consumer in a more favorable position than in the past decade, when frequent shortages of coal cars added to the tenseness of the situation and aided [fol. 1924] materially in the raising of prices. Car shortage came with annoying frequency and the fear of future shortages often made an already bad situation worse. During the disturbances in the coal fields in 1920 and 1922, the coal problem was greatly aggravated by the fact that the carrying capacity of the railroads had not kept pace with the expanding traffic needs of the country. In the last two years, however, the railroads have not only added an unusually large number of locomotives and freight cars, but they have put their equipment into better condition for service than it had been in years. The orders for freight cars in 1922 totaled 180,154, of which one-third were coal cars. Up to December 1, 1923, another 75,346 coal cars were put into service. The year 1924 has seen similar heavy additions to rolling stock, and all of the recent acquisitions have been of greatly increased capacity per unit. Such coal roads as the Louisville & Nashville, the Chesapeake & Ohio, the Virginian, and the Illinois Central have notably strengthened their position in trackage and terminal facilities, while other coal roads have made special efforts to increase their coal carrying facilities.

Reduction in Mine Operating Costs

The next decade will witness many reductions in the costs of operating bituminous coal mines. From the standpoint of both organization and management, the coal industry has lagged behind other industries and only during the last year or two have the coal operators realized the full significance of the competitive struggle before them. The bituminous coal industry is just entering the stage of reducing manual labor through the introduction of machinery. The importance of this change, both to the workman in reducing his toil and to the consumer in reducing the cost of coal, is evident when it is considered that about 70 per cent of the cost of coal at the mine is labor and more than half of this labor is for cutting and loading coal into mine cars. The use of mechanically

operated units with resulting lower costs is inevitable in the face of ever-increasing competition. A considerable number of loading machines have already been put in operation in the non-union mines, and the union mines must adopt the same labor-saving devices with the full co-operation of the unions, or suffer in the competition for business.

In the recent survey of the industry made by the United States Coal Commission, it was found that the cost of coal at the mines was reduced 30 per cent through the use of loading machines. A detailed analysis of costs, output, etc., was made by a group of the leading industrial engineers and the tabulation of their data reveals a marked saving in the machine operated mines. In order to obtain a true comparison of production costs, observations were made on machine loading in a mine recently changed from all hand loading to all machine loading. The table which follows shows in the first column the results of a six day performance of two machine loaders, and in the second column the results of an eight day output of hand loaders:

	Machine operation	Manual operation
Numbers of days run	6	8
Miners mining by the car	4	53
Other men in operations	69	65
Total men underground	73	118
Man days	438	944
Total cars loaded	1,186	1,428.5
Total tons loaded	4,886	5,868
Total tons per day	814	733
Tons per man loader per day	380	13.8
Tons per machine per day	11.2	
Tons per man per day		6.2

The above table shows a material reduction in the number of men underground, and with a longer period of operation it is estimated that this number can be further reduced by more systematic supervision and distribution. The use of the large machine loaders allows a reduction in total mining labor force of nearly 40 per cent.

The introduction of loading machines decreases output as well as decreases the numbers of miners. Certain operators have estimated from their cost records that by running a mine full time their overhead charges and non-productive labor costs can be reduced nearly 50 cents per ton. Similarly, increases in production with the same overhead and equipment will produce large savings per ton of output. By more uniform operation, elimination of lost time, and adoption of better methods, a remarkable opportunity is afforded for increasing production without increasing either inside or outside equipment or labor cost. With such reduced costs, the mine becomes a "low cost producer," with more uniform operation throughout the year. In addition to the lower costs of handling coal, machine loading leads to more systematic undercutting, haulage costs in the mine are reduced, the quantity of timber required is reduced, the

roof of the mine falls less readily because of the more rapid progress, and in many operations less working room is required. Inspection [fol. 1926] and supervision is more effective because of the smaller area worked, the cost of drainage and ventilation is reduced for the same reason, the cost of plant construction per ton is reduced through larger production per man, and the recovery of coal is increased from 5 to 10 per cent.

Recent years have witnessed important developments in coal mine equipment. The cutting machine has eliminated cutting by hand. In machine equipped mines, the electric drill is coming into use and underground loading holds out great possibilities. Loading machines have been a success in metal mines for years but are just reaching the stage in coal mining where they may be called an operating success. The motor and the electric hoist are superseding the mule for gathering coal from working places. For outside work belt conveyors are frequently used for distances of several thousand feet for delivering coal to barges, etc. The more extensive introduction of such improvements means lower coal prices.

Competition with Oil Industry

Fuel Oil.

The rapidly increasing demand for fuel oil is displacing coal for many industrial uses and is intensifying the difficulties in the coal industry. At a time when a large part of the coal industry is suffering from an apparently endless war between capital and labor, fuel oil is assuming rapidly increasing importance as a competitive factor in industry and in the homes. Prior to 1923 short-sighted coal operators were openly ridiculing any reference to fuel oil as a possible competitor, but they now realize and admit the serious inroads it is making in their disorganized industry. The 1923 installations of oil-burning apparatus displaced coal to the extent of 41,000,000 tons per year, the railroads accounting for the equivalent of 24,000,000 tons, industrial users 12,000,000 tons, and domestic users 5,000,000 tons. These displacements are for 1923 only, and are over and above previous fuel oil installations. The 1923 installations of fuel oil apparatus represented a displacement of about 8 per cent of the country's soft coal output. The 1924 fuel oil installations are equally impressive. It is now conceded by both coal and oil producers that fuel oil is superior to coal in such processes as annealing and enameling where uniformity of heat, not obtainable with coal firing, is required. Coal, therefore, not only suffers from a complication of internal economic troubles, but these ailments are aggravated through increasing demands for a competitive product, which in this instance is generally superior in cleanliness, uniformity of heat, convenience, etc.

[fol. 1927] Steamship Fuel.

The United States Coal Commission estimates that 2 per cent of the total coal production in the United States is for steamship fuel. Because of its superiority over coal, the use of fuel oil has increased

at a tremendous rate during the past few years. A large part of the ships now under construction are equipped for fuel oil consumption. The decline in coal loadings for fuel purposes at the principal ports of the United States and the great increase in the use of fuel oil are shown in tabular form in the Department of Commerce figures (Survey of Current Business, Department of Commerce, August, 1924, pages 164-165)

Fuel consumption by vessels

	Coal (metric tons)	Index (1919=100)	Fuel oil (000 barrels)	Index (1919=100)
1913 monthly average	642	106		
1914 " "	606	100	217	19
1915 " "	620	103	297	25
1916 " "	650	109	461	39
1917 " "	574	95	492	42
1918 " "	461	76	550	47
1919 " "	604	100	1,160	100
1920 " "	780	129	2,192	188
1921 " "	629	104	2,256	194
1922 " "	343	57	2,641	228
1923 " "	379	63	3,137	268
January, 1924	423	53	3,159	270
February, "	345	57	3,145	269
March, "	393	50	3,069	265
April, "	347	57	3,508	303
May, "	370	61	3,854	328
June, "	341	56	3,650	312

Superpower

The remarkable development of the Superpower system will cause a substantial reduction in coal consumption and thus tend to drive the price of coal still lower. During the next ten years tremendous developments will take place in the hydroelectric industry and in the substitution of large steam generating stations for the numerous small steam power plants. There are still vast undeveloped water powers in the United States and the near future will unquestionably see many of them developed. Some of these have not heretofore been developed simply because of their magnitude and the limited area of transmission. The latter problems are now being rapidly solved. Some of these great water powers are located far from the coal fields, and their development will greatly reduce the use of coal in those regions, the latter commodity now being exceedingly costly [fol 1928] at remote places because of the long haul. The industrial world is everywhere turning toward the development of water power wherever practicable and its substitution for the use of coal. The recent trend in the above direction in the United States is best shown in the following extract from the annual report of the Federal Water Power Commission for the year ending June 30, 1923:

"Applications involving an estimated installation of 21,500,000 horsepower, permits and licenses issued for an aggregate installation of 7,500,000 horsepower, and 2,400,000 horsepower built or building under license of the commission is the record of three years' administration of the Federal Waterpower Act. In this period the Commission has dealt with applications involving six times as much horsepower, has issued permits and licenses involving three times as much horsepower, and has twice as much horsepower built or building as the individual departments working independently in the preceding 20 years. * * * * When it is realized that only 1,400,000 horsepower had been constructed under Federal authorization in the years preceding the passage of the act and that at the time of its passage the aggregate installation of all water power plants in the United States amounted to only 9,000,000 horsepower, the satisfactory character of the legislation and the substantial results accomplished in its administration are apparent." (Third Annual Report of the Federal Power Commission, June 30, 1923, page 1.)

The application on file with the Federal Power Commission, if granted, will cost approximately as much as the total amount of money now invested in the electric light and power industry. It is anticipated that all of the 20,000,000 horsepower applied for will be developed and in operation by 1930, with additional developments under way by that time. The huge network of Arizona, California, Oregon and Washington comprises the greatest superpower zone at the present time. Five states in the south are connected with 900 miles of trunk lines. Forty-two plants in these states, capable of developing over a million horsepower, are now interconnected. In Idaho, Utah and Montana great transmission systems are being linked together. The merging of large companies in middle western states like Wisconsin, Indiana, Illinois, Michigan and Ohio, is occurring frequently. Equally impressive developments are under way in West Virginia, Pennsylvania, Ohio and Kentucky. These great generating systems will be interconnected to the end that there may be the greatest assurance of continuity of service and the least possible duplication of generating plants, transmission lines, etc.

Before making an analysis of the fuel economy which will result from the use of larger steam driven electrical units and the purchase of wholesale power, a brief statistical survey of certain salient features of the electrical industry should be made. The developments [fol. 1929] of the past five years now make it apparent that they were but the beginning of a vast electrical system with far-reaching effects on industry. The development of steam power and hydroelectric plants during the last three years, as shown by the capital expenditures tabulated by the Electrical World, is as follows:

	1921	1922	1923
Steam electric plants	$149,858,000	$190,543,000	$289,417,000
Hydroelectric plants	45,808,000	63,730,000	74,396,000
Transmission systems	69,907,000	75,588,000	125,200,000
Distribution systems	59,977,000	84,156,000	103,130,000
Total	325,770,000	324,016,000	592,143,000

Power Production and Fuel Consumption

In order to appreciate the tremendous growth of power production in the last decade, the following table is submitted, showing the production in kilowatt-hours by sources for each of the last five years and the total production for the years 1907, 1912 and 1917. The data are taken from Moody's "Public Utilities" (1924):

Year	Kilowatt hours (millions): Hydro-electric	Steam	Total	Fuel consumed: Coal (000 short tons)	Fuel oil (000 barrels)
1907			5,862		
1912			11,569		
1917			25,438		
1919	14,698	24,315	38,921		
1920	16,150	27,405	43,555	37,243	13,122
1921	14,971	26,005	40,976	31,568	12,014
1922	17,249	30,450	47,700	34,199	13,185
1923	19,643	36,335	55,978	38,879	14,707

In spite of the enormous increase in power production since 1920, the amount of coal consumed has increased only slightly, due to ever increasing economies in fuel consumption. The demand for power has increased to such an extent that the utility operators are obliged to increase their generating capacity by about 2,000,000 horsepower annually, and to make corresponding extensions to their transmission and distribution systems. The following table shows the growth of generating capacity in central station steam power plants and hydroelectric power plants:

(fol 1930) Rating of Generators in Central Stations, in Kilovolt-amperes, as of January 1

Year	Steam power plants	Hydro-electric power plants
1903	1,144,000	350,000
1908	2,200,000	1,005,000
1913	4,334,500	2,082,100
1918	6,600,000	4,519,500
1923	13,486,000	6,738,000
1924	15,505,000	7,390,000

The above figures show the recent remarkable utility development. As the above rate of increase will undoubtedly continue, it was deemed necessary by both the utilities and the public to make an exhaustive analysis of future requirements, water power resources, saving in fuel, etc. The Superpower plans are the result of these surveys and represent a comprehensive scheme to develop available water powers and to make the most economical use of present and future

[fol 1942] Comparative Financial and Operating Statistics of Selected

Number of kilowatt hours generated in 1917				Number of stations
Under 200,000				140
200,000	but	under	500,000	65
500,000	"	"	1,000,000	42
1,000,000	"	"	2,000,000	26
2,000,000	"	"	5,000,000	30
5,000,000	"	"	10,000,000	19
10,000,000	"	"	20,000,000	11
20,000,000	"	"	50,000,000	15
50,000,000	"	"	100,000,000	8
100,000,000	"	"	200,000,000 (a)	4
200,000,000	and	over		9

(a) These four plants operate under unusual circumstances. They furnish

d Electric Generating Stations, Grouped According to the Numb
Used in 1917

Average dynamo apacity r station	Kw hr generated per kw capacity of dynamos	Expenses per k			
		Supplies and materials	Salaries and wages	Fuel	Miscel laneous expenses
118	703	.967	3.285	3.103	.533
288	1,108	.554	2.148	2.286	.532
532	1,233	.392	1.409	1.476	.523
850	1,560	.341	1.289	1.297	.349
1,718	1,822	.297	.833	1.027	.249
4,166	1,685	.218	.797	.999	.287
5,949	2,183	.109	.481	.690	.258
12,986	2,120	.106	.484	.602	.243
29,858	2,482	.131	.443	.520	.125
46,260	2,768	.048	.288	.441	.152
86,260	3,120	.130	.494	.362	.292

very large part of their current in bulk to other companies or sell to very

r of Kilowatt-hours Generated and the Type of Primary Power

lowatt hour sold (cents)

Insurance	Taxes	Depreciation	Interest	Total	Pounds of coal per kw. hr. generated
.152	.208	.521	.489	10.080	18.26
.155	.251	.335	.617	7.401	11.88
.082	.204	.339	.462	5.145	8.71
.076	.211	.450	.564	4.913	7.32
.052	.178	.273	.427	3.535	5.78
.046	.186	.367	.430	3.438	4.35
.014	.153	.117	.312	2.166	2.95
.021	.170	.154	.284	2.173	3.34
.011	.137	.196	.298	1.955	3.32
.012	.090	.106	.201	1.387	2.55
.021	.204	.133	.223	2.038	2.49

large wholesale consumers

steam power plants. The immense saving in fuel, transportation and other operating costs to be derived from such plants has been carefully estimated in the several Superpower reports recently published. Great economies in production costs can be secured from the effective interconnection of the utility systems, these economies comprising a reduction in the amount of reserve equipment, a wide diversification of use through increased industrial power consumption, a more advantageous use of water power to carry peak loads, and the development of better load factors. These large plants can operate with greater economy in overhead costs, they can accumulate larger coal reserves at times of favorable markets, many of them can use cheaper grades of coal, and they can operate with much greater fuel efficiency than small and isolated plants. These savings can be brought about through the construction of large plants with individual capacities ranging from 200,000 to 500,000 kilowatts and using generators of not less than 20,000 kilowatts capacity each. In the northeastern district alone this change would result in an estimated saving of 50,000,000 tons of coal per year, or over 10 per cent of the present output of the United States. The saving for the entire country under the Superpower plan would, therefore, be very much greater and its effect on the coal market pronounced.

The operating advantage of large plants is shown in the table submitted below. This table, the data for which were taken from the 1917 census report, groups a selected list of steam power plants according to the kilowatt-hours generated. The coal efficiency of the [fol. 1931] various sized plants in 1917 is shown in the last column. It is important to note from this table that the fuel consumption by the large plants is very much less per unit of output than that of the small plants, and as the data in question are based on conditions effective in 1917, they do not reflect the great progress in power plant design and operation that has been accomplished subsequent to that date and which indicates even greater advantages for the Superpower projects. The table follows:

(Here follows side folio page 1932)

[fol. 1933] The present trend in the utility field is strongly toward the larger units and consolidation with the resulting low unit fuel consumption. The 1922 preliminary census figures show a material decrease in the number of electric stations as compared with the 1917 census, the number of commercial establishments declining from 4,224 in 1917 to 3,775 in 1922. The change in number and capacity of the electrical units during this period is further shown by the fact that the number of steam engines and turbines declined 12.8 per cent, but the horsepower increased 9.7 per cent, the number of water wheels and turbines increased 3.2 per cent, and the horsepower 36.1 per cent, the kilowatt capacity of the dynamos increased 59.1 per cent, and their kilowatt-hour output approximately the same.

In the survey of the district between Boston and Washington, a study of the 90,000 manufacturing establishments in the zone showed that by 1930, through the maximum economical use of purchased electrical energy, these plants could save $190,000,000 annually above the fixed charges occasioned by the motor equipment necessary to receive and use this power. The annual saving in coal was estimated at 20,625,000 tons. The saving by the electric utilities under Superpower plans was estimated at approximately 20,000,000 tons. In many instances coal will be converted into electricity near the mines and the item of freight, a large factor in coal prices, will no longer be a serious element to a large class of consumers. In the industrial region of the eastern states, much of the coal is produced in or near regions where sufficient water is available for condensing purposes. Many of the great manufacturing establishments of the United States are located sufficiently close to the mines and to existing or proposed steam and hydroelectric power plants that high tension transmission lines can deliver the necessary power with but little transmission loss.

Within the northeastern Superpower zone there are 36,000 miles of railroads, 19,000 miles of which could be profitably electrified with an annual saving of coal estimated at 10,210,000 tons. Electrification of many railroads is only a matter of a few years. Many have almost reached the limit of their capacity and must either be reconstructed within ten or fifteen years, with heavier rails, larger and heavier equipment, wider gauges, lower grades, larger tunnels, etc., or the present system must be electrified to handle the constantly increasing traffic. The electric locomotive, with its greater tractive power, lower operating costs, greater speed, and other operating advantages would enable the railroads to meet the increased traffic [fol. 1934] demands without requiring the complete reconstruction of their properties. Again, with the use of electrical energy in industry instead of coal, a large part of the existing freight traffic will be taken off the rails and the present facilities thereby released made available to meet future traffic requirements. The next decade, therefore, will unquestionably witness great strides in fuel economies in utility, industrial and railroad operation, all of which will result in a saving in coal and thereby leave the coal market more subject to competition and tend to lower prices to consumers generally.

Within the next few years a further decided impetus will be given to fuel economy in the industrial field. With the slow but gradual recovery of industrial Europe, the American manufacturer will find that the days of "cost plus" are gone so far as his generation is concerned. Competition, both in quality and price, will become increasingly acute during the coming years and the American manufacturer will be compelled to study costs much more closely than in the boom days of the war and early postwar period. Moreover, with the closing of the immigration gates, greater resort must be had to machinery and better human relations must be maintained. A reviving Europe, driven by sheer necessity, can still be successfully met by high priced American labor, if fuel and other costs are favorable and large scale production is encouraged. Superpower unquestionably will be a necessity in meeting this increasing competition.

Conclusion

Future years, therefore, will continue to see the coal industry the victim of adverse economic circumstances. Many of the economic factors which have contributed to the present difficulties of this industry will probably remain unsolved for many years to come. It is impossible to make any study of this subject without being forced to the conclusion that the ultimate adjustment of this industry to the conditions which now so vitally affect it will be accomplished by the elimination of many high cost producing fields and the concentration of the coal business in those centers which can offer the lowest costs to the consumer. This will be brought about through greater production by the low cost mines and the use of substitutes in the form of fuel oil and hydroelectric power and also power produced by large steam generating stations. Uneconomic wage levels and excessive production costs have always been the greatest incentives for the invention of labor-saving devices and the development of sub-[fol. 1955] stitutes, and nothing has contributed more to the present urgent development of water powers and consolidation of public utilities than the persistent increases in the price of coal, together with the ever recurring hazard of strikes, car shortages, etc. The coal industry is being punished for its own mistakes which excessive demands in various forms have occasioned, and the inevitable reaction and readjustment will bring declining prices to the consumer.

In the face of these conditions it is not probable that the open market price for coal on December 31, 1923, also reflects the fair average price for such coal over the next 18 years. With every indication and development favoring lower coal prices in the future, the valuation estimate which Mr. Davis founded on his assumption regarding the continuance of the December 31, 1923, coal price level is clearly excessive.

It is not, however, to be inferred from the foregoing analysis that the future of the coal producing districts in West Virginia and Kentucky is one of long continued depression. The latter condition would obtain if the coal industry under present industrial developments was to be gradually eliminated. Such, however, is not the case. The coal industry is today depressed because (1) it is overdeveloped, (2) it is being supported on an uneconomic level by artificial devices, and (3) the public is being forced to use new methods and substitutes to reduce to a minimum the burden which the above conditions have created. A suspension of economic law can be accomplished for a short time, and for a somewhat longer period only when the attempt is supported by extraordinary conditions as war, strikes etc. The situation that has developed in the coal fields can be compared with the effect of a dam in the channel of a river. Such a structure may restrict the natural flow for some time, and would accomplish this purpose for a longer period if there was at the same time a prolonged drought. It could not, however, hold back the river permanently without the water finding some other avenue of escape. This is exactly what has been taking

place in the coal industry during the last ten years, for the naturally most favored production fields have been restricted in output by an economic dam and the full coal demands which they should have supplied have been met from other areas. In this manner, an old and profitable industry has been disturbed by artificial forces which have operated only to stimulate new territories at the expense of those which it was intended to benefit.

Normal conditions will be restored in the coal industry when natural laws are permitted to function, and this does not involve [fol 1936] an increase in the price of coal. It will ultimately be attained by allowing the regions most favored by nature in this respect to produce coal on an immense scale and at low cost to the consumers as they can do when production is concentrated in low-cost fields. Prosperity will then return to those coal fields which were able to establish their economic superiority before artificial restrictions were applied.

The coal industry is learning the lesson which every industry must learn when it seeks to escape economic law by legislation or other artificial devices. Witness the recent depressions in such basic industries as wheat, leather, copper, fertilizers etc. In each of these instances the lesson has been learned and after the inevitable housecleaning which such tampering made necessary, the way has been prepared for a more substantial and greater prosperity than was previously known. The wheat farmer has learned something of fundamental economics and with him the country bankers and merchants who are now entering upon a period of real prosperity. The copper and leather industries, after the depression which followed the war stimulated period, have listened to sound economic advice and the investment world is now turning with favor to their capital needs. Other instances could be added, if necessary. The same economic laws are also working to correct the unsettled conditions in the coal fields and when their meaning is understood and fairly accepted, genuine prosperity will come to those sections wherein the richest coal deposits have been developed and this without an advancing price level. West Virginia coal fields are today the most advanced in meeting this necessary readjustment.

[fol 1937] HAGENAH EXHIBIT 3

[fol 1938] Analysis of Appraisal of Leaseholds and Natural Gas Rights by Mr Uebelacher

Valuation Theory Adopted by Mr Uebelacher

Mr Uebelacher has filed an appraisal report setting forth the reproduction cost new as of December 31, 1923, of all the property of the United Fuel Gas Company. As a part of this appraisal he submitted a study of the value of that company's leaseholds and natural gas rights, his conclusions regarding this class of property being as follows:

Estimated value of proven and probably productive acreage	$33,155,422
Estimated value of unproven acreage	3,293,754
Total	36,449,176

The value of the above property is based on the following principle as set forth in his report:

The measure of the value to the owner or lessee of gas in the ground is the difference between the prevailing market price at which such owner or lessee can purchase gas delivered to the field mains and the cost to such owner or lessee of producing and maintaining with his own wells an equivalent supply of gas at the same point of delivery.

In applying the above principle, Mr. Uebelacher found it necessary to arrive at the following three facts as having a material bearing on the application of his theory:

(a) The total cost to the owner or lessee of producing and maintaining with his own wells and equipment an equivalent supply of gas corresponding in delivery conditions to those under which the gas is purchased. This total cost must include operating expenses and depreciation, amortization of the value of the equipment used and a fair return upon the investment in such equipment.

(b) The prevailing market price at which gas can be purchased as controlled by delivery conditions.

(c) The estimated recoverable content of the proven and probably productive acreage.

Briefly, Mr. Uebelacher's method of appraising the natural gas reserves is to find what he describes as the fair market price for gas in the community which the company serves and to ascertain the difference between such market price and the cost to this company of supplying the same service under corresponding delivery conditions. [fol. 1939] This difference he describes as the value of the gas in the ground, and multiplying such value per unit by the estimated recoverable gas, he arrives at the valuation results above set forth. This theory contemplates the consideration of a sufficient number of contracts to establish beyond a reasonable doubt the fair market value of the gas, the accurate analysis of the costs of the United Fuel Gas Company covering both operating expenses and fixed charges on a basis comparable with the method used in ascertaining the so-called market value, and finally, the recoverable content of the gas acreage.

It will be noted that the above theory is substantially the exchange theory of value used by Mr. Davis. The principle is the same, although it varies in the form in which the supporting data are applied. These data, like those compiled by Mr. Davis, reflect a series of hypotheses, assumptions and estimates, rather than known conditions and costs developed under public regulation. Mr. Uebelacher's

theory is based on the hypothesis that certain contracts which have been arrived at through negotiations between the gas purchaser and the consumer with little or no supervision on the part of the regulatory authorities, establishes the fair market value of gas to such an extent that the amount by which this exceeds the cost of supplying a similar service by the United Fuel Gas Company may be capitalized as measuring the value of the latter's gas reserves. While Mr. Uebelacker is not dealing with a substitute fuel in determining the value of this company's product, he is nevertheless capitalizing its natural resources on the basis of the average cost of similar service as supplied by other companies under different circumstances and presumably not so favorably located as is this company. This principle, when carried to its logical conclusion, means that the higher the rate charged for gas in the contracts in question, the more valuable are the gas lands and leasehold property of this company, and consequently the higher the rates which the public should pay for its product under public regulation.

Assuming that the contracts selected by Mr. Uebelacker fairly indicate the market value of gas in the territory in question, it is obvious that he is appraising the gas reserves by capitalizing the earning power of this company as a natural monopoly rather than following the practice which courts and commissions have adopted in valuing property devoted to the public service. The contracts in question have apparently been made by the parties thereto in each case dealing at arm's length, the purchaser accepting a price at which [fol. 1940] he will be able to make that margin of profit on his investment which to him seems proper in his business, and based on the comparative cost to him of a substitute service, while the company is endeavoring to secure to itself all the profit the traffic will bear. The purchaser in such instances is generally not restricted to a reasonable return in terms of utility regulation, but is guided more by competitive conditions in his own business. The gas company, on the other hand, is limited only to such rate as just falls short of inviting competition from other supply companies. It is the earning power of the company here under consideration, as compared with the average cost determined from the above contracts, that is capitalized by Mr. Uebelacker. Obviously, the value of the gas reserves on this basis depends entirely on the accuracy or inaccuracy of the market price or value of gas as developed by this method. If he is able to compute a high market price, the value of this company's gas reserves is correspondingly increased by this theory; to the extent that his market value is reduced by reason of conditions beyond his control, the value of the reserves is lowered.

Carrying the analysis further, it appears that Mr. Uebelacker is arguing in a circle. Whether or not the contracts which he selected establish a market price is highly controversial, but, assuming that they do, it is readily apparent that any application of his theory defeats its own purpose. This can best be illustrated in the case of coal. Instead of six gas contracts, let us assume six competing coal mines of various capacities and whose mining costs per ton naturally

differ. Some of these mines would have natural advantages over others and consequently could make the same margin of profit on a lower selling price than some other company merely because their operating costs or fixed charges per unit were less. If a low cost mine has great capacity, and this illustrates how important the question of capacity really is, it could take advantage of the market price, if this were determined by average costs as Mr. Uebelacher suggests and produce so much coal as to force the discontinuance of the high-cost mines. The latter would be eliminated in the inverse order of their production costs, the highest cost mine dropping out of the competitive race first and followed in turn by the other mines until finally the market reached the level of economical production by the most favored producers. The higher cost mines, if they remained in operation, would have to accept lower profits. This is precisely what happens in a competitive market and illustrates how markets are made. In other words, that mine which combines the [fol. 1941] most favorable costs with the largest productive capacity will fix the market, and its high cost competitors are at its mercy unless an agreement to restrict competition is effected. No such competition and market price can be proven by six individual contract rates.

The above method does not measure value in an economic sense and even more clearly does it not measure the value of utility property. The difference between such estimated market price and the cost of producing the commodity in question from a single source does not furnish a basis for capitalizing this advantage as proof of value of the source of such commodity. The market price of gas, if such a conception is possible, is so uncertain and fluctuating as to furnish no reliable basis for an appraisal. In applying this theory to what is at best an uncertain situation, Mr. Uebelacher has ignored what is probably the most important single factor in determining the market value or price he seeks.

Referring to specific items in Mr. Uebelacher's report, it will be noted that there is a wide difference in the contract rates, these ranging from 8 cents per thousand cubic feet to 22.6 cents per thousand cubic feet, the latter being the cost of gas delivered by the United Fuel Gas Company at Cedarville. The advantage of this company, as computed under the several contracts, also varies widely, ranging from 2.5 cents to 11.50 cents. The contracts in question pertain to different companies, and are operative in different communities. Surely these few contracts cannot be said to provide that broad competition which must be present before the exchange theory of value can be applied. A present open market in this service is economically impossible. If it were possible to have such an open market and if free competition prevailed in regard to these contracts, it is obvious that the company which could supply gas on a profitable basis at 8 cents per thousand cubic feet would obtain whatever portion of the total demand in this market it desired and this to the extent of its entire capacity. This is readily demonstrated. If its capacity were small, or the exhaustion of its gas reserves about to be reached, it would be a smaller factor in determining the mar-

ket price of gas than the indicated ratio of one to six in the number of contracts considered. That the companies associated with the low costs mentioned by Mr. Uebelacker are not selling their gas at the high prices indicated for Cedarville or in Pittsburgh may be explained by the fact that their supply is so small as to make the necessary extension of pipe line facilities inadvisable, or the distance, as well as other obstacles, may restrict them to the very districts in which they are operating. This is not indicative of such an [fol. 1942] open market as would furnish the basis for determining the value of a single gas reserve without taking into consideration many factors other than the few mentioned by Mr. Uebelacker.

The fact that certain high cost producing companies have been able to make such contracts as Mr. Uebelacker considered is the most convincing proof that there is no such competition in this field as furnishes the basis on which the exchange theory of valuation respecting competitive commodities may be applied. Substituting the names of coal mines in each of the contracts listed on page 44 of his exhibit, and assuming that each is furnishing the same quality of coal and that production costs are as widely apart as the gas costs indicated in his study, what, it may be asked, would become of the mine compelled to charge nearly four times as much for its coal as another competing in the same field? Are there many instances in competitive business where companies have long been able to remain in operation when their costs exceeded those of their most dangerous competitors by the margins indicated in these several contracts? Could such condition prevail in private business except under agreements not to compete, which are but agreements to set aside economic law?

In the case of competitive commodities, such as coal and pig iron, the product from each mine or furnace seeks the level which its costs compel. The markets of individual concerns are constantly shifting because of such factors as productive capacity, rate of production, efficiency of labor, managerial skill, changes in freight rates, etc. A producer may be driven from one market only to adjust his costs and regain his former position, or possibly gain other markets. Unless he can meet these conditions, his business fails. The above conditions do not apply in the remotest degree to the United Fuel Gas Company, which is a natural monopoly and as such subject to public regulation. If the commission has authority to fix the rates for service by this company, it can affect the market value of its gas reserves. If it can change one contract, it can change others and thereby substantially change that market price or value to which Mr. Uebelacker refers. If in each instance the contract rate is to be based principally on the cost of production, plus depreciation and a reasonable return, the substantial difference in rates which would result for the different companies in the state would be the best proof that there is no such open market for the products of these utilities as to establish the value of the gas. If the commission has not the right to fix rates, there is no purpose in seeking a rate in [fol. 1943] excess in this instance. The recognition of the right to prescribe rates for this company carried with it the recognition that

the commission may fix rates in individual instances of industrial consumption which may be even higher or lower than those which Mr. Uebelacher considered. How, then, can the gas reserves of the United Fuel Gas Company be appraised on the basis of their advantages as compared with the rates charged under six specific contracts for service, which services by their very nature are not competitive, wherein the costs vary widely, and in respect to which the volume of production has not been considered?

Further proof of the highly speculative and hypothetical character of the data on which both Mr. Davis and Mr. Uebelacher have based their appraisals of the gas reserves is found in the latter's assumption of a delivery rate of 30 cents per thousand cubic feet for the company's entire product for industrial use in Pittsburgh. This rate, it was said, "compares favorably with the cost of hot producer gas," and is also supported by the opinion of natural gas men that the steel industry would readily pay that price for large quantities of such fuel delivered uniformly throughout the year. Based on this rate for the company's entire product, Mr. Uebelacher finds that the company's gas reserves are worth 7.188 cents per thousand cubic feet, which, standing alone, would support on his basis an appraisal value for the gas reserves of at least 40 per cent in excess of his estimate of $33,000,000.

Against the above data, Mr. Davis sought to prove that the proper cost of hot producer gas as a substitute fuel was 35 cents per thousand cubic feet, and on this basis he also appraised the gas reserves at $32,458,000. Thus, so lacking in scientific justification and stability are the theories advanced by Messrs. Davis and Uebelacher in their appraisal of the company's gas reserves that whether the cost of the next most advantageous substitute in the same market and devoted to the same service is placed at 35 cents as an average cost for 18 years or at 30 cents as of 1923, the result as affecting the company's values is approximately the same. Both estimates cannot be correct. If the estimate by Mr. Davis is right, the value of the company's gas reserves on the basis of Mr. Uebelacher's theory would be greatly in excess of the amount shown in the latter's report, but should Mr. Uebelacher's estimate of the cost of such substitute fuel be right, Mr. Davis' final value of the reserves would be drastically reduced. So large a variation in the basic data on which the value of this [fol. 1944] property is predicated must either prove the uncertainty of the facts on which the exchange theory can be applied or the failure to apply such theory correctly.

Application of Exchange Theory to Data Compiled

Granting for the purpose of analysis that the six contract prices cited by Mr. Uebelacher establish the market value or price for gas and that 5 cents is a reasonable value of the company's gas supply in the ground, Mr. Uebelacher has not correctly applied the facts in his report. He appraises the value of the gas reserves on the basis of 5 cents per thousand cubic feet multiplied by the estimated content of the field, and on the amount so obtained he allows the

company a return of 5 per cent and in addition thereto an amortiz
tion charge. This is incorrect. To apply his theory properly, M
Uebelacker should have added to the operating expenses of the com
pany a sum equal to 5 cents per thousand cubic feet withdrawn
from the gas reserves and no further charge should be made fo
return on the investment or amortization. There can be no charg
in the operating expenses for return or for amortization on the ga
in the field after that drawn out has been charged at its fair marke
value. If the value of the gas taken is 5 cents per thousand cubi
feet, that amount, plus the direct operating expenses, must be in
clusive of all charges pertaining thereto. The owner cannot sel
his product at the market price and then seek to obtain in additio
thereto another charge to cover the return on his investment in th
entire field. Return, amortization, etc., must be paid out of the
cent value or cost per thousand cubic feet. If this 5 cent charge
sufficient to provide the owner with a reasonable return on the valu
of his property from which the gas is taken, he possesses a good in
vestment. If such market value for the gas taken will yield him mor
than a reasonable return, it is to that extent more valuable than
indicated by the above referred to 5 per cent return. If, on the othe
hand, the sale by the owner of his natural gas production at th
market price will not yield him a reasonable return, the loss, i
there is any, falls on the owners and not on the public. This
obvious because if the 5 cents per thousand cubic feet represents th
market value, nothing further can be added to that amount becaus
to do so would result in a final cost in excess of the market valu
and this would prevent the sale of the company's product at th
ascertained market price.

That all charges incident to the supplying of a commodity o
delivery of a service must come out of the market value of the com
[fol. 1045] modity or service is one of the elementary laws of busi
ness. The market price is the maximum sum that can be collecte
and is not an amount to which other charges may be added. Mr
Uebelacker accepts the market value as determining the value o
the company's product under ground, but in compiling his cost
to be met by the rate for gas he adds charges which bring his tota
in excess of the market price. When his costs are applied correctly
there is no large profit to capitalize and hence no such enormou
value as is claimed.

An illustration of the impracticability of applying his theory
shown in the recent experience of the copper mining companies
During the last few years the price of copper has tended downward
with the result that many high-cost producing mines have discon
tinued operation and others have been operating with little or n
profit. As the demand for copper decreased the low-cost mine
were able to retain the business by lowering their selling price be
low the level at which some competitors could survive. For exampl
the Kennecott Copper Company and the Chile Copper Company
both low-cost producers, have been operating under very favorable
conditions as to output and profit, while the Anaconda Copper Min

ing Company, one of the largest producers and whose operating costs per pound have exceeded by from 50 to 60 per cent those of the above two companies, has been operating on a greatly restricted basis and with little profit. During this time the market for copper has ranged from 13 to 14 cents per pound. If the unit costs of the Anaconda company were 11 cents, the value of its ore in the ground, in a period of 13 cent copper would be, according to Mr. Uebelacher's theory, 2 cents per pound. The mining costs of the Chile company are about 6 cents per pound, making the value of its reserves 7 cents per pound, to be applied to the recoverable content. In appraising the value of the latter's mine, the company could not multiply such content by 7 cents and include in its operating expenses charges pertaining for return and amortization of such value would result in a cost to the public in excess of 13 cents per pound. To do so would be to develop a price in excess of the market and copper could not be sold on that basis. The 7 cent margin or advantage of the Chile company is therefore all that can be added to its mining costs and must cover the company's requirements for return on the investment, amortization, etc.

[fol. 1946] HAGENAH EXHIBIT 5

[fol. 1947] Proportion of Gas Reserves Presently Used and Useful

In the reports prepared by Mr. Ralph E. Davis and Messrs. Ford, Bacon & Davis, consulting engineers, covering the property of the United Fuel Gas Company, it is contended that the present value of the gas reserves owned by this utility is approximately $33,000,000. The unsound reasoning by which such results were obtained has been analyzed in other memoranda, for both appraisals reflect a conclusion based on the exchange theory of value. As opposed to these appraisals it is believed that the book cost of the property as determined by Mr. Jirgal and aggregating $6,732,920 more correctly reflects the fair value of the property in question.

Accepting, for the purpose of further analysis, the conclusions of the above engineers, but not admitting the application of their theories nor the accuracy of the results obtained, it appears that not all of the gas reserve which was appraised by them is a part of the presently used and useful property of the company. The record shows that the supply of gas contained in the reservoir appraised by the engineers is sufficient to meet the reasonable requirements of the company over a period estimated at 18 years. The mere ownership of such a reserve, however desirable from the standpoint of the stockholders and also beneficial to the public which the company serves, does not imply that the reserve in question is all used and useful property. On the contrary, this extensive gas reserve is in large part exactly what the term implies, namely, a reserve for future use, and only such portion as is rea-

sonably necessary for the present and early future can be considere
as a part of the rate base. The remainder of the gas reserv
must be regarded as an investment by the company, acquired f
the benefit of the public, and to be gradually absorbed in th
rate base as needed at the then prevailing market price.

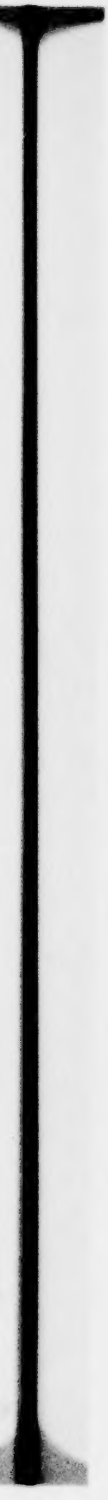
It has been the practice of public service commissions through
out the entire period of utility regulation to consider carefull
any property acquired for future use on which the company sek
to earn a present return. This rule, logically applied to a natur
gas company, contemplates that of the total gas reserve which h
been acquired, only a reasonable proportion, appraised at prese
market value, is to be included in the rate base as presently us
and useful, unless the entire reserve is held to have been acquire
for the benefit of the public, in which case the property must b
included in the rate base at its actual cost. What proportion o
[fol 1948] the reserve owned by a specific company may properl
be regarded as used and useful at any time must be determine
from a study of the circumstances peculiar to that company an
must reflect the best judgment of the commission based on a
the material factors. It is the settled rule, fortified by a line of cle
and convincing decisions, that the rate base on which a utilit
company is entitled to earn a reasonable return can embrace onl
property presently used and useful, and this rule applies as w
to natural gas reserves as it does to excess holdings in land, exce
building and machine capacity, outside investments, etc.

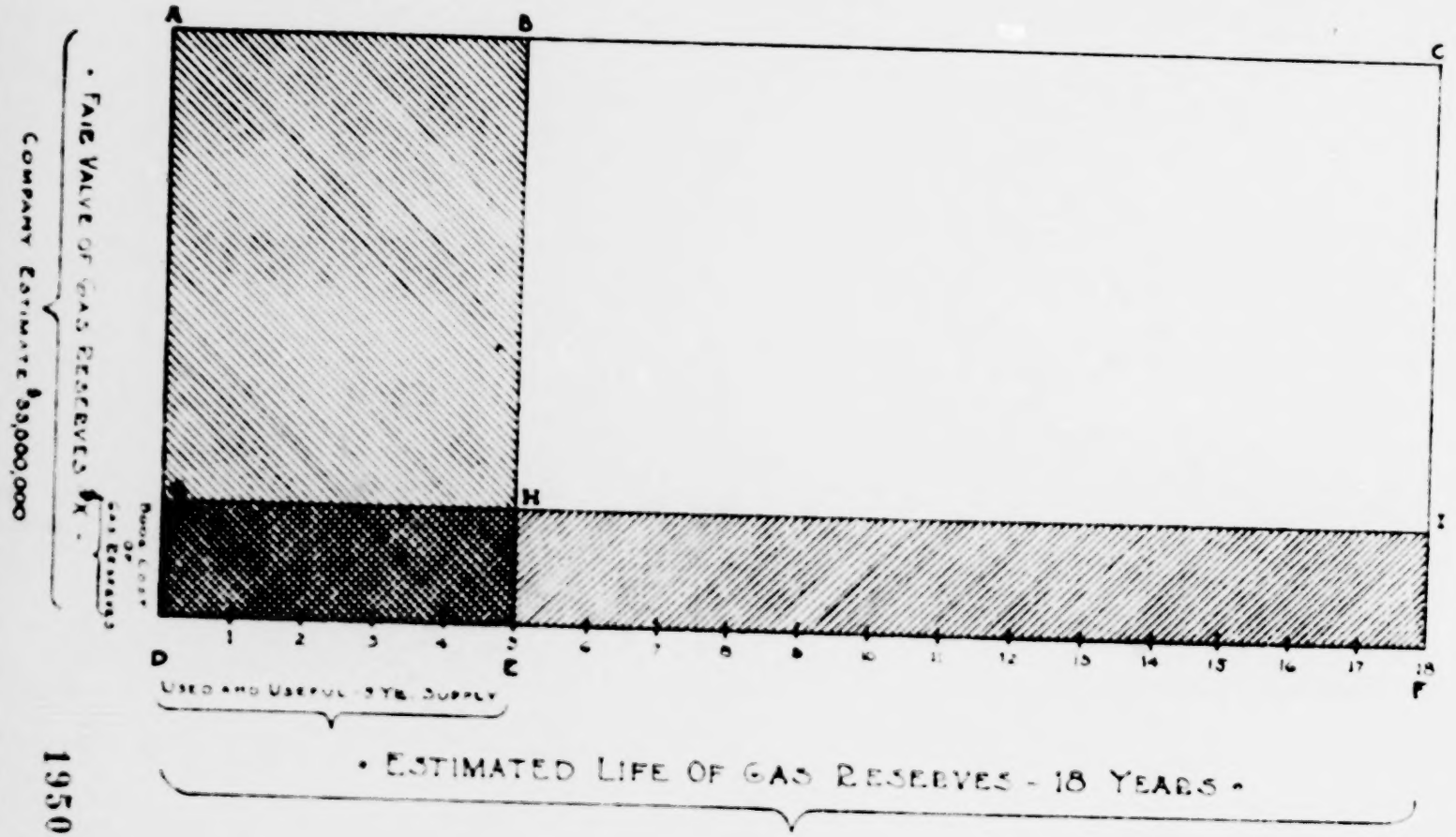
Referring to the application of the above theory to natural g
property appraisals, the Supreme Court of Pennsylvania, in th
case of Erie vs. Public Service Commission, decided January
1924, and reported in P. U. R. 1924D, page 80, held:

The Commission correctly summarized the law in these word
"Gas holdings should be included and evaluated only to the e
tent that they represent developed, used and useful territory, inclu
ing a reasonable reserve for the continued functioning of the co
pany in its public service. Such holdings should be included
the rate base at their present value."

In the case referred to the above rule as stated by the commissi
was approved by the court, and while the commission's decisi
regarding the main issue on which the appeal was taken was n
upheld, the case in question is authority for the principle th
the gas reserves of a natural gas company are to be appraised
their fair present value but not all of such appraised value
necessarily a part of the rate base. On this subject the co
further held as follows:

However, the present value of all property is not necessari
to be considered in the rate base. Generally speaking, thou
property may have the value claimed, if a reasonable proportio
of its energies or the most and useful property is not devoted
public service, it should not ask the consumer to pay a retu





ACFD - AREA REPRESENTING APPRAISED PRESENT VALUE OF GAS RESERVES - 18 YEAR SUPPLY.

GIFD - AREA REPRESENTING BOOK COST OF GAS RESERVES - 18 YEAR SUPPLY.

ABED - AREA OF PRESENT VALUE OF GAS RESERVES NOW USED AND USEFUL - 5 YEAR SUPPLY.

BCFE - AREA OF PRESENT VALUE OF GAS RESERVES HELD FOR FUTURE USE AND NOT NOW USED AND USEFUL - 13 YEAR SUPPLY.

W. [illegible]

on the excess not used in public service, allowing of course for a reasonable reserve. • • •

In ascertaining what part of the value of the gas lands not presently in service should be included in the rate base, we must consider the purpose for which the additional holdings were acquired and the physical characteristics unique to this class of lands. (Here follows discussion by court of the characteristics of a natural gas reserve.) Because of these qualities, while it may be possible to presently determine the value of the lands, in fixing the probable proportionate amount of future life of the entire tract applicable to used, useful and fair reserve, it may be, and no doubt is, im-[fol. 1949] possible to delimit it with any degree of certainty either in acreage or value. There can be no graduated values of gas lands fixed as a rate base under any theory presented to us that will consider property presently used and a descending ratio until exhaustion appears that is not the result of a pure guess. Beyond that proportion of the lands reasonably necessary to the company's life, the rate payer should not be required to assume the remainder as a burden. Though this may be difficult to determine, the Commission, acting as an administrative body in each case, must decide the question, as in all other matters subject to the right of appeal.

The character of a natural gas reserve is such that it cannot be physically divided and the [illegible] portion of the total which is used and useful must necessarily be a judgment expression. It is believed that an 18 year supply is more than is presently used and useful. The public interest will be adequately protected by a reserve sufficient to meet all reasonable requirements for 5 years in the future, and only such portion of the reserve should be included in the rate base at its fair present value. The remainder of the reserve, which has been acquired by the company in part for its own protection and in part for the use of the public, may be regarded as an investment carried by the utility for the speculative enhancement which it will reflect when it becomes a part of the used and useful property and is appraised at the then prevailing market price. There is submitted herewith a diagram showing the application in this case of the principle above described and reflecting a 5 year gas supply at its present fair value, assuming for this purpose the accuracy of the appraisal results determined by the company's engineers. The diagram follows.

(Here follows diagram marked side folio page 1950)

[fol. 1951] The above diagram illustrates in the form of a rectangle the gas reserves of the company as ascertained by its engineers, and by proper markings there is shown the relationship between the actual cost of such property as found by Mr. Jirgal and the appraised value, as well as the proportion of such property

deemed presently used and useful. The area ACFD represents the appraised value of the gas reserves, namely $33,000,000, and covers the estimated 18 year supply. The area ABED shows the present value of that portion of the gas reserves now used and useful on the basis of a 5-year supply. The area GHFD represents the book cost of the gas reserves, which Mr. Jirgal found to be $6,732,920. The area BCFE represents the present or appraised value of the gas reserves held for future use and not now used and useful. This latter proportion of the total holdings is sufficient to cover a 13 year supply.

Further explaining the application of the principle above stated, it will be noted that at the close of the first year, the 5 year block, or area ABED will be moved forward to cover what the diagram shows to be the period from numbers 1 to 6, inclusive; at the end of the second year the block will have moved forward to cover the period from numbers 2 to 7, inclusive. As the reserve is diminished through use, the proportion of the total presently used and useful is moved forward until the entire rectangle marked ACFD has been covered and paid for by the public at the appraised present value, there always being a 5 year supply included in the rate base at the appraised value until the exhaustion of the field is reached.

The inclusion in the rate base of only a reasonable portion of the entire gas reserve is made necessary by the semi-public character of a natural gas utility. A private corporation may conduct its business without public restriction and without limitation as to income. Its officials may make extensive investments of corporate resources in plant and working capital items in anticipation of a long market rise and encounter no public interference. A utility, on the other hand, cannot seek a return on property in excess of its reasonable present requirements; its earnings are subject to public regulation and its activities must conform to the established law and rules governing the regulation of such corporations. The officials of a private company need not account to the public for their actions or for profits realized from their activities. However, a party who occupies a trust relationship akin to that of an agent [fol 1952] cannot purchase with the funds of his principal property to be used in the conduct of the business with which he is entrusted and later reap a personal profit therefrom at the expense of his principal. This reasoning applies also to public utilities because of their relation to the customers they serve. A public utility cannot make a present investment of corporate funds over which intended for the future benefit of the service, and reap a profit therefrom at the expense of the public, if the rate payers have been asked to bear all the carrying charges in the meantime. Stated in another manner, if the rates for service are to cover the expense of carrying property to meet future needs, the public is not to be charged with the higher cost of acquiring such property in the future when the anticipated developments have occurred.

Applying the above reasoning to the United Fuel Gas Company, the utility is not entitled to a return on the present value of its

entire gas reserves when such reserves have been considered a part of the company's provision to meet future requirements and have been carried as such in the costs of the company. Property acquired by the officials of the company in the usual course of their duties, and for the benefit of the service which they are engaged to administer, is charged with a public interest to the extent that profits therefrom should go to relieve the subscribers, since the rates for gas have been adjusted to cover the compensation of the officials who purchased the property and also interest on the money invested. The officers of a public utility are selected because of their skill and judgment in the discharge of their duties, which duties include the acquisition of gas lands, and for such work they are paid a fair compensation. The public therefore may contend that it is entitled to the benefits resulting from the competent management by those whose compensation it provides. It has a right to expect from them that measure of skill and judgment consistent with the compensation they receive. Since the acquisition of these gas reserves has been accomplished by the officials of the utility in the performance of their duties and also with the funds of the utility, the obligation of the public to this company is met when there is included in the costs a reasonable return on the present value of that part of the reserve which is used and useful, or on the book cost of the entire reserve acquired for the public use.

It follows, therefore, that the public should be charged with the [fol 1953] cost of carrying the gas reserves according to one of two different methods, as follows:

A. Assuming that a 5-year gas supply is a reasonable measure of the reserve presently used and useful, and also assuming for this purpose the accuracy of the appraisals made by the company's engineers, there should be included in the cost of service a return on only 5/18 of the value of the gas reserves, the remaining property of this class being carried as an investment by the company at its own expense until such time as it is used and useful, when it will be included in the rate base at its then present value.

B. Adopting the same assumptions as are set forth under A above, there should be included in the cost of service a reasonable return on 5/18 of the value of the gas reserves and a return at the same rate on 13/18 of the book cost of such reserves.

In the first of the above two instances, the stockholders are given the full benefit of the appreciation which has taken place in their property to the extent that it is presently used and useful, but no provision is made for a return on speculative holdings. In the second instance, or that marked B, the owners receive, as in the first instance, a return on the appraised value of their property presently used and useful, and they are also compensated to the extent of the actual costs incurred assuming that part of the reserve not presently used and useful. Which of the two above methods should finally be adopted is a question of public policy.

HALDEMAN EXHIBIT No. 6 and 6a

United Fuel Gas Company, Inc., and Subsidiaries

Statement Distribution of Net Earnings by States Available for Depletion, Depreciation, and Return on Reproduction Cost Less Accrued Depreciation When Gas is Valued at 5 Cents per M Cubic Feet in the Ground

Particulars							
Reproduction Cost Less Accrued Depreciation (Including Overhead Charges)	Basis of apportionment	West Virginia	Kentucky	Ohio	Wholesale service	Total for natural gas service
Production System	Sales	2,189,611	612,582	278,680	5,650,272	8,720,075
Transmission System	System Demand Mileage	2,374,887	1,177,307	662,295	7,247,301	11,461,898
Distribution System	Direct	2,215,992	478,250	413,364		3,107,256
General Property	Overhead on Property	197,892	68,198	39,549	376,202	681,041
Total Physical Property		6,978,122	2,334,317	1,393,888	13,273,775	23,980,180
Working Capital	Overhead on Expenses	282,540	90,432	48,267	568,755	990,000
Going Concern Value	Overhead on Property	873,200	292,050	174,471	1,660,280	3,000,000
Total Investment		8,133,862	2,716,778	1,616,574	15,491,980	27,969,180
Gross Earnings						
Revenue from Sale of Gas	Direct	2,310,961	994,197	530,670	5,258,589	9,194,418
Miscellaneous Revenues	Overhead on Revenues	7,890	3,388	1,814	18,273	31,365
Total Gross Earnings		2,318,851	997,585	532,484	5,276,773	9,225,673
Operating Expenses and Taxes						
Gas Purchased	Sales	135,497	43,846	14,961	646,478	839,264
Production Expense	Sales	80,944	25,153	11,456	231,048	358,280

Value of Gas in Ground at 5 cents per M Cubic Feet Produced	Sales	469,187	131,211	59,752	1,208,374	1,868,524
Transmission	System Demand Mileage	124,338	61,640	34,673	370,433	691,084
Distribution	Direct	101,228	20,100	27,776		150,104
Commercial	Direct	86,315	20,458	15,487		122,260
General and Interdepartmental	Overhead on Expenses	50,334	18,900	10,136	119,436	207,806
Total Above Items		1,085,843	331,108	179,082	2,539,269	3,935,402
Taxes	Property	139,407	46,618	27,851	265,022	478,898
Profit and Loss Adjustments	Overhead on Expenses	4,635	1,483	792	9,331	16,241
Total Expenses and Ordinary Taxes		1,229,885	379,209	207,725	2,813,722	4,430,541
50% Gasoline Net Revenue	Sales	254,630*	65,615*	20,880*	694,278*	934,394*
Net Operating Expenses		975,259	313,594	177,845	2,069,449	3,496,147
Gross Income		1,323,572	683,991	354,639	3,307,224	5,729,526
Income Taxes—Estimated	Taxable Income	37,836	17,419	9,883	247,208	312,346
Net Earnings Available for Depletion, Depreciation, and Return		1,285,736	666,572	344,756	3,120,116	5,417,180
Per Cent. of Reproduction Cost Less Accrued Depreciation		15.21*	24.45*	21.39*	20.14*	19.38*

[* Red in copy.]

1931

HAGENAH EXHIBIT NO. 7 AND 7A

United Fuel Gas Company, Inc., and Subsidiaries

Statement Showing Amount and per cent of Return Earned on Cost of Reproduction Less Depreciation When Gas is Valued at 5 Cents per M Cubic Feet in the Ground

Particulars West Virginia	Cost of reproduction less depreciation at Dec. 31, 1935	Net earnings available for depreciation and return	Depreciation 5.5% of book cost of property	Net earnings available for return	Per cent on cost of reproduction less depreciation
City of Charleston	3,396,534	651,356	132,957*	518,399	15.26
City of Huntington	2,556,555	275,830	101,034*	174,796	6.84
City of Williamson	349,858	44,434	13,822*	30,612	8.75
Other West Virginia Towns	1,831,021	314,116	71,525*	242,591	13.25
Total West Virginia	8,133,968	1,285,736	319,338*	966,398	11.88
Kentucky	2,716,778	666,572	106,786*	559,786	20.60
Ohio	1,616,374	344,756	63,799*	280,957	17.38
Wholesale Service	15,491,860	3,120,116	607,084*	2,513,032	16.22
Total Gas Department	27,959,180	5,417,180	1,097,007*	4,320,173	15.45

(Here follows Hagenah Exhibit No. 8, marked sole folio page 1956)

[fol. 1956]

Statistics of

	Crude petroleum production	
	Millions of barrels	Index, 1913=100
1913 Monthly Average	20.7	100
1914 " "	22.1	109
1915 " "	23.4	115
1916 " "	25.0	123
1917 " "	27.9	137
1918 " "	29.6	145
1919 " "	31.4	154
1920 " "	36.9	181
1921 " "	39.1	189
1922 " "	46.4	224
1923 " "	61.0	295
1923		
January	52.5	254
February	48.5	235
March	56.9	275
April	59.0	285
May	62.3	301
June	62.8	304
July	65.9	318
August	66.4	321
September	65.3	315
October	67.5	326
November	65.3	316
December	59.5	288
1924		
January	56.4	273
February	55.4	268
March	59.7	288
April	59.4	287
May	61.6	298
June	59.2	286
July	61.0	295
August	61.7	298
September	59.6	288
October	59.8	289
November	56.3	273

Hagenah Exhibit No. 8

f Crude Petroleum and Gasoline Production, Consumption, and Stock

Crude petroleum consumption		Gasoline production		Dom gasoline co
Millions of barrels	Index, 1913=100	Millions of gallons	Index, 1919=100	Millions of gallons
21 8	100	...	...	...
21 7	100	...	...	...
22 7	104	...	...	...
26 5	122	...	...	...
31 4	144	257	72	218
34 4	158	297	89	260
34 8	160	329	100	286
43 7	201	406	123	354
43 7	201	429	130	376
49 3	226	516	157	447
59 5	273	629	191	557
54 2	249	623	189	456
51 4	236	568	172	380
59 6	274	639	191	446
58 7	269	619	188	485
57 8	265	631	192	582
55 1	253	636	193	633
62 0	285	636	193	674
64 6	296	648	197	692
62 2	285	623	189	655
63 6	292	659	200	621
60 8	279	617	187	548
63 8	293	659	200	518
62 2	286	695	211	500
59 1	271	677	205	396
63 1	290	743	225	467
61 7	283	754	229	607
62 4	286	779	236	672
59 9	275	737	223	686
61 1	280	741	225	789
61 0	280	755	229	819
62 4	287	750	227	718
64 2	296	769	231	751
64 2	296	762	232	695

stic sumption	Gasoline stocks at end of month		Number of days' stocks of crude oil on hand	
Index, 1919—100	Millions of gallons	Index, 1919—100	Actual days	Index, 1919—100
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
76	343	73	159	137
94	386	82	126	109
100	472	100	116	100
124	464	98	92	79
131	630	134	111	96
156	785	167	153	132
195	1,126	238	147	127
160	1,002	212	146	126
133	1,130	239	140	121
156	1,259	267	135	116
170	1,336	283	135	116
204	1,328	281	146	126
221	1,263	267	151	130
235	1,165	247	146	126
242	1,053	223	144	124
229	972	206	148	128
217	946	200	155	134
188	985	209	160	138
181	1,074	228	157	135
175	1,200	254	162	140
138	1,383	293	160	138
163	1,587	336	162	140
212	1,625	344	162	140
245	1,649	349	167	144
240	1,598	338	171	147
276	1,470	311	177	153
286	1,311	278	180	155
251	1,229	260	170	147
263	1,152	244	170	147
243	1,133	239	164	141

[fol. 1857] HAGENAH EXHIBIT No. 9

United Fuel Gas Company

Statement Showing Apportionment of Investment and Expenses Between Gas and Gasoline Departments and per Cent Available for Depletion, Depreciation, and Return in Case of Gas Department

Year Ended December 31, 1923

1. Statement Showing Distribution of Present Value Between Gas and Gasoline Property

Joint Gas and Gasoline Property	
Production System (100%)	$14,122,814
Transmission System (45%)	4,371,028
General Property (66⅔%)	384,000
Total above Items	$18,877,842
Overhead on above at 18%	2,186,086
Total Joint Gas and Gasoline Property	$21,063,928
Deduct—Gasoline Proportion of Joint Property (24.62%)	5,185,939
Balance—Gas Proportion of Joint Property	$15,877,989
Add	
Balance of Transmission System (55%)	5,342,369
Distribution System (100%)	2,633,268
Balance of General Property	192,305
Balance of Overheads	1,470,230
Total Physical Property—Gas Department	$25,516,161
Working Capital	990,000
Going Concern Value	3,000,000
Total Present Value—Gas Department	$29,506,161
Gasoline Proportion of Joint Property as above	5,185,939
Total Present Value—All Property	$34,692,100

II Statement Showing Distribution of Joint Expenses Between Gas and Gasoline Departments

Joint Gas and Gasoline Expenses	
Production Expenses (100%)	$1,139,634
Gas Purchased (100%)	619,264
Transmission Expense (45%)	270,038
Total Direct Items	$2,028,936
Add—Proportion of General Expenses (71.2%)	148,022
Total Joint Gas and Gasoline Expenses	2,176,958
Gasoline Proportion of Joint Expenses above (24.62%)	535,967
Joint Property Taxes Assignable to Gasoline Department	71,595
Total Expenses Assignable to Gasoline Department	$607,562

III Statement Showing Return on Value on Above Basis

Present Value Assigned to Gas Department as above	$29,506,161
Net Earnings before Depletion and Depreciation per Jirgal Exhibit No. 1	$6,504,270
Deduct—50% of Gasoline Net Earnings	934,394
Net Earnings before Considering Gasoline	5,569,876
Add Back—Gasoline Proportion of Joint Expenses as above	607,562
Net Earnings after Adjustment for Gasoline—Available for Depletion, Depreciation and Return	$6,177,438
Per Cent on Present Value as above	20.94

HAGENAH EXHIBIT No. 19

United Fuel Gas Company, Inc., and Subsidiaries

Statement Showing Per Cent Earned on Various Valuation Bases for the Year Ended December 31, 1923

Particulars	Present value of property including book cost of leaseholds	Present value, including 5/18 of appraisal value of leaseholds	Book value basis	Present value, excluding leaseholds and assuming gas value in ground of 5 cents per M cubic feet	Present value, after assigning proportion of joint property to gasoline
Valuation Assigned	$34,692,109	$37,125,845	$30,278,912	$27,959,180	$29,506,161
Net Earnings before Depletion and Depreciation	6,504,270	6,504,270	6,504,270	5,417,180	6,177,438
Per Cent on Valuation*	18.75*	17.52*	21.48*	19.38*	20.94*
Provision for Depletion and Depreciation	1,399,227	1,399,227	1,399,227	1,097,007	.....
Net Earnings after Depletion and Depreciation	$5,105,043	5,105,043	5,105,043	4,320,173	.....
Per Cent on Valuation*	14.72*	13.75*	16.86*	15.45*	.....

1* Red in copy.)

1929

IN THE

DISTRICT COURT OF THE UNITED STATES

FOR THE

SOUTHERN DISTRICT OF WEST VIRGINIA.

No. 1517) In Equity

UNITED FUEL GAS COMPANY, a Corporation, *Plaintiff*,

versus

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS and JAMES J. DIVINE, constituting the said The Public Service Commission of West Virginia, HOWARD B. LEE, Attorney General of the State of West Virginia, and FRED M. LIVEZEY, Counsel for said The Public Service Commission of West Virginia, *Defendants*.

BEFORE ROSE, CIRCUIT JUDGE AND McDOWELL AND McCLINTIC, DISTRICT JUDGES.

Harold A. Ritz for the Plaintiff, Howard B. Lee, Attorney General and Fred M. Livezey, Counsel for The Public Service Commission of West Virginia, for the original defendants; H. D. Rummel, Robert S. Spilman and Paul M. Scott, (Donald O. Blagg, C. M. Strickling, George S. Wallace and Harry Scherr on the Brief for the Intervening defendants).

Submitted May 18, 1925. Decided .....

Rose, Circuit Judge:

On the 2nd day of April, 1925, the United Fuel Gas Company filed in the United States District Court for the Southern District of West Virginia at Charleston, its bill in equity. The defendants named in it are The Public Service Commission of West Virginia; Birk S. Stathers, Ernest D. Lewis and James J. Divine, (the members of the Commission); Howard B. Lee, the Attorney General of the State; and Fred M. Livezey, Counsel to the Commission.

On the 17th day of April, 1925, sundry municipal and private corporations obtained leave to intervene. Both the original and the intervening defendants have answered. The latter will be called the protestants.

The bill states certain facts which are not in dispute, the more important of which are that for a considerable time, the plaintiff has been engaged, among other things, in producing and selling natural gas in West Virginia and elsewhere. Some of the plaintiff's gas business is with domestic and industrial consumers in that State, and some is with wholesale purchasers. Certainly since 1916 (case 482; 1 Decision Public Service Commission of West Virginia 238) and perhaps since 1913, United Fuel Gas Co. vs. Public Service Commission, 73 W. Va. 571, the rates charged by the plaintiff to consumers in West Virginia have been regulated by the Public Service Commission. With some relatively unimportant exceptions those now prevailing, have been in force since 1919. The plaintiff claiming that they did not give a reasonable return upon the value of its property devoted to West Virginia public service, on April 26th, 1924, filed a new and higher schedule, the going into effect of which was at once suspended by the Commission. After a full hearing and the taking of much testimony, the Commission on March 24th, 1925, by a vote of two to one, held

that the old rates yielded an adequate return and refused to let the plaintiff exact the new. P. S. C. W. Va. Bulletin 91. The plaintiff charges that the rates thus continued in force are confiscatory. It asserts that the defendants, the Attorney General of the State and the counsel for the Commission are charged with the duty of enforcing certain statutes which subject to fine and imprisonment any public service corporation and any of its officers or agents who disobey the orders of the Commission. It says that as a consequence, its property is being taken from it without due process of law. Injunctive relief is prayed.

Judge McClintic refused a temporary restraining order. Answers were filed which denied that the rates prescribed by the Commission will not yield a fair return on the plaintiff's property used in the public service. The application for an injunction *pendente lite* was heard by the Court as now constituted.

THE PLAINTIFF AND THE COMMISSION.

Up to date, this is the latest scene in a practically continuous performance, which began on May 21, 1917, more than eight years ago, with a petition of the plaintiff, numbered on the Commission's docket #585, for permission to increase its rates to domestic and industrial consumers. On February 28th, following, the Commission by a report and order (Bulletin 43) granted some of the relief asked for and refused the rest. In less than ten months, the plaintiff presented a new application docketed #845. It asked to be allowed to make another raise to domestic consumers and to discontinue all service to industrial. This proceeding was pending for a year when on December 19, 1919, the Commission filed a report and order (Bulletinn 51) by which some, but

not all of the advance sought was allowed but permission to cut off gas to industrial consumers was denied. After an interval of eighteen months, the plaintiff was back with a petition, #1251, which the Commission accurately described as in practical effect an application for a rehearing of the two earlier cases, #585 and #845, respectively. On April 28, 1922, the Commission by a report and order (Bulletin 70), made some additional allowance to the plaintiff in the matter of rates and suspended further action to await the result of six months' operation under a prescribed system of accounting. On the 20th of February, 1923, the information which the Commission had sought being then before it, the plaintiff asked that the case be further heard. Such request was granted with the result that on August 9, 1923, (Bulletin 82), the Commission allowed a considerable temporary increase and retained the proceedings to await the result of six months' operation, to end March, 1924. From this order the present protestants appealed, as the State law permitted, to the Supreme Court of Appeals, which on November 27, 1923, 95 W. Va. 91, reversed and set aside the findings and order of the Commission and remanded the case for "such further investigation and order as may be proper."

Nothing further was done until April 26, 1924, when the plaintiff filed a new and higher schedule of rates. Upon the plaintiff's motion the nominally new proceeding, #1516, was consolidated with #1251 which was still open and which, as has been stated, was in itself, really an application for a rehearing of the earlier cases #585 and #845. It was in this consolidated proceeding that the Commission refused permission to make the desired increase, and thereby according to the plaintiff confiscated part of its property without due process of law.

THE CASE IN THIS COURT.

By stipulation, the testimony and exhibits submitted to the Commission were treated as before us and some additional testimony was put in.

In the course of this long drawn out controversy, many contentions have been made. Some of them are at once novel and difficult. Questions are raised, authoritative answers to which will affect public and private interests of far greater magnitude than those directly before us, considerable as the latter are. The law of public rate regulation is still in the making. Courts will do well to move cautiously and to speak sparingly. While stating all the facts which to either lawyer or layman can seem relevant, they should attempt to decide nothing not required for the full, fair and just determination of the actual cases before them. Upon the record before us, it will be easier for us to keep ourselves within such limits if we depart somewhat from the usual order of discussion in rate cases and deal with other questions before attempting to appraise the value of the plaintiff's property, used and useful in the public service.

DEPRECIATION AND AMORTIZATION.

The plaintiff employs in its business, a plant which, like that of every one else, is subject to the wear and tear of use and misadventure. In order to keep itself in condition to render efficient service and to protect itself against the gradual decay of its investment, it must annually expend or lay aside a sum sufficient to offset deterioration. The plaintiff, moreover, is faced with a problem with which most public utilities are not concerned. It does not make the gas it sells. That has existed for milleniums and plaintiff now owns much of it or at all events, has rights to or in it. When it is used, it

is gone forever. A portion of plaintiff's annual receipts, therefore represents the proceeds of the sale of its property. Moreover, when the plaintiff's gas supply shall become so far exhausted that it can no longer be profitably transported and sold, a large part of the value of its physical plant will vanish, for in the location in which it now is, and for the uses to which it is now put, much of it will be worthless no matter in how good a state of physical preservation it may then be. It is possible that some of it may be put to profitable use where it is. Other portions may have an appreciable salvage value, but a good deal of it will inevitably prove a total loss. In short, in addition to setting aside something every year to make good ordinary depreciation, the plaintiff must make arrangements adequate for the amortization of a considerable part of its investment.

Some of its expert witnesses have attempted further differentiations between the various kinds of depreciation or consumption. These may be useful from a bookkeeping standpoint, but we agree with the Commission that for the purposes now in hand, such refinements are unnecessary. The plaintiff is entitled to set aside annually such sum as will be needed to keep its physical plant as good as new in so far as that is possible, or if possible, desirable, and in addition, such sum as will at the end of the estimated length of the profitable life of its plant, make good its value. This allowance for amortization will in itself render unnecessary quite so liberal a provision for depreciation as might otherwise be called for. If the plant could look forward to a life of indefinite duration, the depreciation allowance should be large enough not only to make the repairs and replacements which would be practicable and useful, but also to offset the deterioration in value incident to lapse of time and which does not necessarily result in any im-

mediate impairment of efficiency of operation and may not be discernable by inspection, but which has, nevertheless, certainly taken place. When, however, provision is made for the amortization of the plant as a whole at the end of a definite and not very long period, the allowance for depreciation may properly be confined to the sums necessary to keep it in the meanwhile, up to a high state of industrial efficiency.

DEPRECIATION.

What sum should the plaintiff annually set aside for depreciation? In the fourteen and a half years beginning July 1, 1909, and ending December 31, 1923, it actually expended for that purpose an average of $203,463.61 per annum. In the first six and a half years of that period, its annual outlay on that account was a trifle over $140,000; in the last eight, not quite $255,000. It has spent in that way all that it usefully could. Its expert witnesses say that its plant is now in such condition that for operating purposes it is practically 100% efficient. The Commission is willing to allow it for the future $404,333 per annum. As the record now stands, we are not justified in holding that more is required.

AMORTIZATION.

The Commission allows for amortization, a sum equivalent to 4.15% of the fair value of plaintiff's property. This is clearly more than sufficient. It does not take quite $3.90 paid in at the end of each of eighteen years, compounded annually at 4% to amount to $100.00 at the time the last payment is made. The plaintiff's expert witnesses say that the probabilities are that it has considerably more than eighteen years of profitable business life ahead of it. Even when the exhaustion of its gas holdings shall bring its activities to an end, not all of

its property will be worthless. There will be an appreciable portion of it wich, without expensive reconstruction, may be put to other uses and there will be some salvage in a considerable part of the remainder. The income set apart for amortization will come into plaintiff's hands with more or less regularity through the whole of each twelve month period and in large part, will be available before the end of the year. It is highly probable the plaintiff can so use the funds of its amortization reserve so as to get more than 4% per annum for them. Savings banks will pay it as much.

Taking everything into consideration, we are convinced that 3.65% per annum will be a generous allowance for amortization.

RATE OF RETURN

The Commission has fixed 8% as the rate of return to which the plaintiff is entitled. In view of the ample provision for the amortization of plaintiff's property at the end of eighteen years, this is certainly liberal.

The year 1925 was a comparatively good year for the railroads and yet the net return upon the book value of their property was less than 5% and such values are doubtless far below the present reproduction costs. It is true that the natural gas business is in its nature far more speculative than that of the railroads, but the allowance for amortization minimizes, if it does not altogether offset its greater hazards.

It follows therefore, that the plaintiff will have no reason to complain that it is not receiving a fair return on its property if, after deducting from its net earnings $404,333 per annum for depreciation, the balance left shall be sufficient to pay 11.65% upon the fair value of its property used and useful in the public service, that is 8% in addition to 3.65% for amortization.

EARNINGS.

Upon the face of plaintiff's books as they were kept, its net income from the gas portion of its business for the year 1923, was, after deducting operating expenses and taxes $3,995,802.82

The Commission finds that to this sum should be added as the result of certain bookkeeping adjustments the sum of..... 187,533.93

We do not understand that this finding is attacked. In any event, we are satisfied it is justified.

PROFITS FROM GASOLINE EXTRACTION.

It pays the plaintiff before delivering its gas to its customers, to take out the gasoline which is in it when it comes from the wells. Some years ago the plaintiff organized another corporation to do the actual work of extracting the gasoline and afterwards turned over the stock of this new company to its own stockholders of whom there are but two, both corporations. It made a contract with its gasoline extracting subsidiary or went through the form of making a contract with it, as you please, by which it was to receive one-eighth of the gross profits of the extracting. The Public Service Commission of West Virginia has repeatedly held that in determining whether the plaintiff's stockholders are receiving a fair return on their property, it may, so far as concerns the matter in hand, inquire what the gasoline arrangement really profits them. The Commission has determined that what comes to them is more accurately measured by a sum equivalent to one-half of the subsidiary's earnings than it is by the one-eighth of the gross profits. This conclusion was expressly sustained by the Supreme Court of Appeals of West Virginia in the case of City of Charleston vs. Public Service Commission of West Virginia, et al, 95 W. Va. 91, and in

which the parties were identical with those now before this Court. We do not find it necessary to consider whether the issue there passed upon is now *res adjudicata* because even if it is not, we are as to it of one mind with the highest Court of the State. For the year 1923, one-half of the net earnings from gasoline extraction amounted to $934,393.41.

SALES OF GAS TO STOCKHOLDERS.

This, however, does not represent all the plaintiff earned for its owners. The plaintiff's two stockholders took from it, large quantities of gas amounting in the year 1923 to more than one-third of all sold by it. The price to one of these stockholders was 7¢ per M. C. F. and to the other 7½¢. For the two, it averaged 7.279¢. The plaintiff admits that this gas was worth much more. In determining what return plaintiff made to those interested in it, we do not understand that it questions that there should be added to its earnings as they appear upon its books, the difference between the price paid to its stockholders and what it could have gotten from others for the gas they took.

VALUE UPON WHICH RETURN WAS EARNED.

Assuming for the moment that the finding of the Commission in this respect is accurate, the net revenues of the plaintiff for the year 1923 were as follows:

On the face of its books	$3,995,802.82
Add Adjustments	187,533.93
Profits of gasoline extraction	934,393.41
Return to its stockholders from gas sold them below cost	2,143,661.46
Total	7,261,391.62

If from this be deducted
Depreciation Allowance of 404,333

There remains $6,857,058.62
which is 11.65% on $58,858,872.27.

The Plaintiff says that the Commission, in its calculation, did not take into account the fact that if it had received the extra $2,143,661.46 from its stockholders, it would have had to pay federal income tax thereon, and that, therefore, its gains would not have been measured by the full amount, but only by the difference between it and the extra income tax which would in that event have been levied upon it. The record as presented to us, does not make it clear whether the Commission did or did not make any allowance for this income tax complication. In any event, the protestants have figured the gains for the plaintiff's stockholders on a basis much more favorable to it, and have incidentally taken fully into account the increased income tax the plaintiff would have had to lay out had its stockholders paid in cash for the real value of the gas they received. They calculate $1,495,497 to be the minimum net addition which should be made on account of the gas so furnished, which gives an income sufficient to pay 11.65% on $53,295,228.84, a sum more than two and a half times as much as plaintiff's investment including therein all the money it has borrowed and still owes.

VALUE OF PLAINTIFF'S PROPERTY.

What is the present worth of plaintiff's property used and useful in the public service?

ITS INVESTMENT.

In this connection, it will be well to inquire what is the amount of the plaintiff's investment. As already stated, the amount its stockholders have paid into it, is not more than ..... $ 6,000,000.00

On December 31, 1923, it owed an aggregate of 12,060,343.34

It follows that all the money which ever went into it did not exceed $18,060,343.34

COST.

It is true, however, that the cost of the property it now has is greater than the total of its investment.

For convenient discussion of the questions most sharply controverted, it will be expedient to divide what the plaintiff possesses into three classes, namely, (first) its tangible property, comprising lands, buildings, pipe lines, machinery, tools, working capital and a hundred other more or less similar things, (second) its going concern value and (third) its other intangible possessions, consisting of interests or rights in gas still in the ground. For the first class, that is, its tangible possessions, it had paid up to December 31, 1923 ..... $19,945,582.16

As we shall later see, there is a dispute as to what its intangible holdings actually cost but the Commission found that they stood on its books at 6,343,329.67

and for the present purpose they may be so taken although some of the accountants put the figure somewhat higher.

That is to say, the aggregate cost of the plaintiff's present property of all kinds was not greater than $26,288,911.83

This aggregate exceeds by $8,228,568.49 all the outside money that by any possibility ever went into the prop-

1941

erty. Where did it come from? A small part has been supplied by money laid aside for depreciation but not yet actually expended for that purpose. The greater part of it, however, represents the sums reserved out of earnings for the purpose of amortizing the plant when its period of useful life shall come to an end.

It will now be desirable to examine with care plaintiff's claim that both classes of its properties are now worth much more than it invested in them or that they in any sense cost it.

TANGIBLE PROPERTY.

As already stated, it spent for its tangible property $19,945,582.16. These expenditures were made at different times and consequently in dollars having varying purchasing power. Translating all of them into the currency of 1923 and using for that purpose the index figures of the Department of Labor, we find that expressing them in dollars of that year, the cost was $24,546,309. The plaintiff's experts estimate that the reproduction costs of these properties would be $37,054,425.00, which exceeds the book cost by $17,108,842.84, or by almost 86%. As we have seen a part of this excess, that is the portion represented by the difference

between	$24,546,309.00 and
	19,945,582.16
or	$ 4,600,726.84

is due to the decrease in the purchasing power of the dollar but the estimated reproduction cost new, exceeds the actual cost in dollars of 1923 as they are arrived at by using the index figures named, by the difference between

between	$37,054,425
and	24,546,309
that is	$12,508,116 or 50%

Labor and such materials as went into plaintiff's construction work may, and doubtless have, increased in cost at a higher rate than have the average of all commodities, the latter including food stuffs and agricultural products generally. The witnesses agree that this is so, but so far as we can recall, no attempt has been made to work out with precision the effect of these factors. We are satisfied that upon the most liberal estimate, they can not account for more than one-third of the $12,508,116, the difference between what would have been the cost of the plaintiff's property expressed in dollars of 1923 as determined by the use of the index figures of the Department of Labor and what its expert witnesses say would now take to reproduce it. Where does the other $8,000,000 or more come from?

OVERHEADS

We are persuaded that it is almost altogether due to the liberality with which the witnesses estimate the outlay which in reproduction would be made for direct and for general overheads. The latter alone are figured at $7,963,311. There is no possible question that in almost all of these rates cases the overhead charges included in the estimated cost of reproduction greatly exceed any sum that the utility actually paid out for such purposes. A large and widely distributed plant is ordinarily a growth extending over many years. Its property is managed by its officers and its construction is financed in installments. The large overheads estimated by the experts are simply not incurred. The plaintiff's expert based his calculation concerning them largely upon the experience he had in the erection of other plants, especially one in Alberta, Canada. He apparently ignored the history of the construction of the plaintiff's, about which he was testifying for it is certain that no such expenditures for overheads were in fact found necessary by it. The

writer of this opinion had on another occasion, to give some consideration to the great discrepancy there almost always is between what the experts, in making up a reproduction cost, estimate must be expended for overheads and the sums the particular utility actually laid out for such purposes. Chesapeake & Potomac Telephone Co. of Baltimore City vs. Whitman, 3 F. (2d) 938, 947, *et seq.*

A well managed public utility almost always builds up an organization which as part of its every day work and without appreciable additional cost, can and does superintend the making of such additions and extensions as from time to time may be required. The possession of such a staff is not the least important asset going to make up what is called going concern value. Perhaps one of the reasons why reproduction cost, although one of the weightiest elements in the determination of present fair value, is not necessarily controlling, is the very fact that in arriving at it, the experts always include an expenditure for overheads far in excess of any which the utility ever incurs.

The plaintiff is here because it is dissatisfied with the ultimate conclusion to which the majority of the Commission came as well as with some of the findings of law and fact by which that decision was supported. The justice of its criticism is the issue upon which we must pass. Whatever we or others may think upon that point, we believe there can be no question that all the Commission united to give a very sympathetic ear to many of plaintiff's contentions. For illustration, they substantially accepted Mr. Uebelacher's estimate that the cost of reproducing new the tangible property of the plaintiff would be $37,054,425

although the expert witness for the protestants had said that it could be done for ... 1,663,273

less money; that is for $35,391,152

The only deduction the Commission made from Mr. Uebelacher's total was an item of $254,332. The plaintiff had expended that amount in sinking dry or worthless wells. It might have reasonably claimed that such an outlay was a part of its prudent investment but the Commission could not see the way clear to hold that such expenditure could be fairly included in the reproduction cost of the property used and useful in the public service. Deducting from Mr. Uebelacher's total of $37,054,425
this 254,332

the Commission found that the cost of reproducing new the plaintiff's tangible property used and useful in the natural gas portion of its business to be $36,800,093

Very possibly, it would cost something in that neighborhood to duplicate in one continuous operation all the plaintiff's present plant. It is true that there is no occasion for any such duplication. Plants of the size and more or less scattered character of that of the plaintiff are seldom or never constructed in the manner assumed by the reproduction theory. Nevertheless, because there is usually no other way of arriving even approximately at the fair market value of the utility's property, Commissions and Courts are forced to give great weight to what the evidence shows the cost of reproduction would be. In so doing, however, it is only fair to bear in mind how seldom a purchaser of such a utility, no matter how free a market for it there might be, would feel justified in paying for it as much as it would cost to reproduce all of its property even after making proper allowance for any physical depreciation it had undergone.

No wise man would incorporate in a newly constructed plant duplicates of not a little which in the old still

served its turn well enough. The money could be used to far better advantage.

DEPRECIATION OF PLAINTIFF'S TANGIBLE PROPERTY.

The Plaintiff's plant was not new and all agree that it is worth less than if it was, although there is the usual difference as to the extent of its depreciation. The plaintiff, through its witness Mr. Uebelacher, fixes $8,433,105 as the amount which on that score should be deducted from the reproduction cost new. We have not been able to make certain whether any part of the $254,332 of his estimate of the cost of sinking dry wells, disallowed by the Commission, is included in his allowance for depreciation, although it is quite possible that somewhere in the wilderness of tables and exhibits the question is answered. Fortunately, the item is not so large as to make certainty as to it essential.

The protestant's expert, Mr. Hagenah, calculates the depreciation at $11,421,972. The principal and indeed the only substantial difference between him and Mr. Uebelacher, is that the latter took into account nothing other than the observed physical depreciation while he held that when the normal life of any item of the plant will probably or certainly be cut short by the depletion of the supply of gas, it should be treated as now proportionately less valuable because no matter in how good physical condition it is, it has already run out a part of its definitely limited span of life. There cannot be room for much difference of opinion that a pipe line which will lose all its value at the end of say eighteen years, because there will no longer be any use for it where it is and because it will cost more to dig it up than it will be worth when brought to the surface, is not in any reasonable sense of the term, worth as much as would be one

out of which forty years of useful service can be expected. From the standpoint under consideration, it would make little or no difference whether the pipes had been newly laid or had been in the ground for years. In either case, they would be efficient for eighteen years and after that, they would both be equally valueless. Logically, Mr. Hagenah would seem to have followed the right method of ascertaining the present fair value of the property. On the other hand, Mr. Uebelacher would be correct if what the plaintiff is entitled to earn is to be figured with the primary purpose of preserving to it the money it has prudently invested in the public service. Nevertheless, the Commission rejected Mr. Hagenah's and accepted Mr. Uebelacher's figures for depreciation. It follows that if from the $36,800,093

which they found to be the cost of reproducing new all of plaintiff's tangible property, they deducted its observed physical deterioration 8,433,165

there remains a balance of $28,366,928

That would doubtless have been the valuation which the Commission or the majority of it would have put upon the plaintiff's tangible property had they had before them evidence of nothing other than the cost of reproduction new and the observed physical depreciation. There was, however, much other testimony, as for example, as to investment, cost and many other more or less relevant matters to which they felt in duty bound to give consideration. Having done so, one of them concluded that on December 31, 1923, the fair present value of the plaintiff's tangible property was $25,000,000. The other agreed with him in denying any increase of rates and valued the same property at the same time, at $26,000,000. The

third, or dissenting member, did not make any specific finding on this point.

Taking into account all the various matters considered by the Commission and the others which have been set forth in this opinion, and trying to give to each and every one of them its due weight, we are persuaded that the fair value on December 31, 1923, of plaintiff's physical property did not exceed $26,000,000.

GOING CONCERN AND WORKING CAPITAL.

In addition, the Commission allowed the plaintiff $3,000,000 for going concern value and found it used as working capital $990,000. There seems to be little challenge of the former figure and none at all of the latter. If there be added to the $26,000,000, the maximum value on December 31, 1923, of plaintiff's tangible property, the total will be $29,990,000.

It should be noted that according to the plaintiff's books, of its total investment not exceeding $18,060,343.34 not less than ..... 6,343,329.67 went into gas leases so that all that was employed in the purchase or construction of its physical properties and in supplying its working capital was 11,717,013.67

The value of pipe lines, compression pumps, buildings, tools, etc., as expressed in dollars, has become greater as the purchase power of the dollar itself has declined, but as a rule, there has been little, if any, other reason why they should have become far more valuable now than they once were. The supply of such things is not limited. They can be bought and duplicated in indefinite quantities. They are not affected by such causes as those which we shall see plaintiff says have made its gas reserves enormously more valuable.

The facts and conditions being as they are, a valuation

of even as much as $26,990,000 for the physical property and working capital of the plaintiff is explainable only upon the assumption that it has put in to that property many millions out of its earnings. There is, of course, no question that it has done this to a very considerable extent, but even so, the valuation which we have put upon its physical property, its working capital and its going concern value, would seem to err if at all on the side of liberality.

PLAINTIFF'S GAS RESERVES.

In a sense, at least, the plaintiff owns, or at all events, is in a position to own if it will, the gas and oil under 814,910.68 acres of land. It is seized in fee of them under 41,969.47 and holds the balance upon what are called leases. The number of these separate documents run into the hundreds or thousands. They have been made at different times, with different men and under all sorts of varying conditions so that their provisions are by no means uniform. Speaking broadly, however, they are for the most part alike in their general nature. By their terms, the plaintiff obtains from the previous owner of the gas and oil, the exclusive right for a number of years to search for those commodities, and to take them if they are found. As a rule, the plaintiff pays the so-called lessor a cash sum at the time the lease is made. Usually the amount is relatively small but sometimes it is substantial. So long as the plaintiff merely holds the lease, that is, retains the option to search for gas or oil without actually doing so, it pays a modest annual rent. Usually, it may surrender this option at its pleasure and thereby put an end to its obligation to pay rent for the future. On the other hand, if at any time during the lease, gas or oil is obtained in a merchantable amount, the term of the lease is automatically extended for so long as it

shall continue to flow in such quantities. So soon as the plaintiff begins to take either from the premises, it becomes under obligations to pay a fixed or percentage royalty, the amount of which is much greater than the rent payable during the period of the unexercised option.

In 1909 the plaintiff, at a valuation of $7,233,538.96, took over from its predecessors existing gas leases. The protestants' very able accountant made an analysis of all the available data as to the actual cost of them to plaintiff's assignors and as a result, came to the conclusion that it did not amount to as much as $2,000,000. There is no question that the plaintiff since 1909 has charged the $7,126,454.33 it expended for rentals and royalties to operating expenses. On the other hand, it carried to property account the $1,098,673.02 it paid as bonuses for new leases or for renewals of old, but it has not deducted from that account the $1,535,917.85 which represented or was supposed to represent the cost to it of leases which it had abandoned. Such a method of keeping its books may show what its prudent investment has been but tends to obscure rather than to throw light upon the actual present value of its property used and useful in the public service. It is sufficient for the present at least, to note the fact for it does not matter very much whether this $1,535,917.85 shall or shall not be taken into account in determining the present fair value of the plaintiff's property. Even if it should not be deducted, the total cost to the plaintiff of its gas rights does not amount to more than $9,000,000. If to that sum be added the $29,990,000 which we have already found to be the present fair value of all the rest of its property, used and useful in the public service, the total will still be under $39,000,000. As has already been shown, the plaintiff is earning a fair return upon something over $53,000,000. Its right to an increase in rates depends not upon the

cost of its properties no matter how that be figured, nor from that standpoint is it very important what sum one may find to be the present fair value of any of them other than its gas holdings. It may be allowed all that it can possibly claim on either of these scores and it will still fail to make out a case unless it shows first, its gas reserves are now worth many times what it paid for them and second that all, or a large part of them, should be treated as property used and useful in the public service.

PLAINTIFF'S REAPPRAISAL OF ITS GAS RESERVES.

It is of little moment that upon plaintiff's books its rights in gas have been valued at nearly $40,000,000 for four-fifths of this impressive total, or to be exact, $31,778,111.42 of it, represents merely the plaintiff's hope, belief or conviction, as the fact may be, that its gas properties are now worth more than five times the utmost it ever paid for them. On the 21st of December, 1918, it made an application to the Commission for permission to raise its charges to domestic consumers and to discontinue service to industrial. Its right to the relief it sought depended in large part upon its convincing the Commission that its gas rights had greatly appreciated in value. It accordingly had them valued by an expert and on the 31st of December, ten days after it had filed its petition with the Commission, it credited to its capital account the $31,778,111.42 already mentioned, as the result, so the entry said, of an appraisal. The Commission in fixing the amount upon which the plaintiff was entitled to a return refused to include this alleged increase and in the subsequent cases numbered #1251 and #1516 respectively, it adhered to the position then taken. The Supreme Court of Appeals in its opin-

ion in Charleston vs. Public Service Commission, 95 W. Va. 91, already cited, reached the same conclusion.

In substance the instant case resolves itself into an attempt to convince us that in this matter the Commission and the Court were wrong. The burden of establishing that fact is upon the plaintiff and obviously is not a light one. It says that the principal ground assigned for this holding by at least one of the Commission in its latest and presumably its most thoroughly considered finding, is altogether technical, that even from that narrow standpoint, it is unsound and that in any event it should be disregarded because something far more substantial is required to justify an order which denies to it the right to get a profit from that which would otherwise yield it a rich return.

The plaintiff moreover, argues that neither the Court nor the Commission has ever denied that it was entitled to a return upon the present fair value of its gas rights. It asserts that all that has ever been decided is that the evidence before those tribunals did not show what those rights were worth. It says that if any shortcoming in that respect ever existed, it has been made good in the pending case.

NATURE OF PLAINTIFF'S TITLE TO ITS GAS RESERVE

In case #1516 in which was made the order which we are asked to say is confiscatory, one of the two Commissioners constituting the majority, said that under such leases as those held by the plaintiff, there passed "no title in the gas to the lessee and that title to the gas remains in the lessor and it continues as his property until it is extracted, when title vests in the lessee," citing Headley vs. Hoppengarner, 60 W. Va. 626. As a consequence he found that while the plaintiff had many gas leases, it

owned no gas except the comparatively small quantity in which it held the title in fee. He recognized that if the appreciated value of plaintiff's property could be shown, that appreciation must be recognized and treated as part of the rate base, but he said the value must be of something "which the utility owns, to which it has title and on which it pays taxes." As the plaintiff's evidence relating to the increase in value dealt solely with "gas reserves" and "gas acreage" it was in his view beside the mark. No testimony had been offered as to the worth of the leaseholds as such and subject to their varying terms, conditions and limitations. He therefore held that as no other value of the leaseholds had been shown, they could not be taken to be worth more than their book cost, which on the 31st of December, 1923, he said was $6,343,329.67. The other Commissioner who united in denying the increase asked for, seems to have taken substantially the same view although he put upon them a valuation of $10,500,000.

These Commissioners were unquestionably right in so far as they concluded that a fee simple title to all the gas under a given acreage would be worth more, perhaps far more than are mere rights to extract the gas under the same land when such rights are held under a thousand separate leases, containing varying terms and conditions expiring at different times, all calling for the payment of rents and royalties and to prevent the lapse or forfeiture of some of which constant vigilance is required. On the other hand, one of the Commissioners went into a somewhat elaborate discussion of the legal differences between the various kinds of titles or rights to or in gas still under the surface and by so doing has lead the plaintiff to feel, perhaps not unnaturally, that too much stress was laid upon purely technical considerations and that as a consequence substance was sacrificed to shadow. As al-

ready pointed out, there is a real difference between the value of what plaintiff has and what it would have were its title a fee simple one but for all that, plaintiff may be right in claiming that when one comes to express that difference in terms of dollars and cents, practical rather than technical considerations must govern.

PLAINTIFF'S CONTENTIONS AS TO THE VALUE OF ITS GAS RESERVES.

In some of the opinions which held that the plaintiff had not proved that its gas rights were worth much more than it paid for them, it was said that it had not offered in evidence the leases or contracts under which they were held. In the instant case, it has attempted to meet this criticism by submitting to the Court specimens of many of the forms generally used by it and has furnished tables which purport to classify those actually in force with particular reference to the payments which under them it is or may be called upon to make and, as we understand, by throwing the originals of all of them open to such inspection as any of the parties to the cause or the Court, may see fit to make of them. That is a privilege of which a special master might well avail himself but of which it is impractical for us or any of us to make use.

THE EVIDENCE OF MR. DAVIS.

The plaintiff put on the stand Mr. Ralph P. Davis, of Pittsburgh, a consulting engineer and geologist of wide experience. He was for a time director of the School of Mines of the University of Wisconsin and instructor in applied geology. As a result of his examination of the deeds, leases and contracts held by the plaintiff, he says that on the 31st of December, 1923, the plaintiff owned either the gas or the exclusive right for a period of years,

to drill for and extract gas underlying the 814,910.68 acres of land already mentioned lying chiefly in West Virginia but partly in Kentucky near the West Virginia border. More than three-fifths of this total acreage, or to be precise 552,319 acres, is located in territory in which it is not yet shown that there is any substantial probability of finding gas. Of the remainder he says, 126,208 acres are in what he calls probable territory, that is in territory in which it seems likely gas will be found. He classifies 136,384 acres as proven territory. The slightest shade over one-half of this, or 68,981 acres, were at the time being operated by the plaintiff, treating as we have throughout this opinion, certain subsidiary companies absolutely controlled by it as its mere agencies.

In this operated territory, the gas in the porous underlying rock strata is gradually being consumed by the plaintiff's customers and apparently the same is also in a sense at least true of the 67,483 acres which Mr. Davis describes as proven, but which are not part of what he calls operated territory. If we correctly understand his testimony, he includes in proven territory only that which lies in the boundary of the producing pool from which the plaintiff is obtaining gas. He says "in a few localities, pools or portions of pools are almost entirely controlled by foreign interests and these areas, although highly productive, are not classed as proven for the reason that their reserves are of no avail to the" plaintiff. Mr. Davis, as has been stated, says plaintiff controls 126,208 acres in the territory which he regards as probably underlaid with gas, but as to which that fact has not yet been established.

QUESTIONS AS TO VALUE OF GAS RESERVES.

Among the questions raised by the claim of the plaintiff, that the value of the gas under these various classes of

acreages shall be treated as part of the value upon which it is entitled to a return, are first, what is the amount of the gas under each Class? Second, what is its present value? Third, how much of that value is presently used in the public service?

AMOUNT OF GAS CONTROLLED BY PLAINTIFF.

Mr. Davis estimated the gas under the proven territory at 249,100,000 M. C. F. and under the acreage he classed as probable 414,600,000, a total of 663,700,000. It will do no good to state the methods he followed in making these estimates. It will suffice to say that they appear to have been well thought out by a highly qualified expert and to have been carefully applied. In the first instance, he used the same way of arriving at the amount of gas under the merely probable as he employed in estimating that under the proven. He then, however, examined much more closely, the available data as to each section of that which he classed as probable and made some discount from the total at which he had at first arrived. These discounts vary but they averaged 38% so that his total of gas lying under the probable acreage is but 62% of what it would be had he felt himself justified in treating that acreage as he did proven territory. His testimony stands uncontradicted. Indeed, he is the only witness on either side who has attempted to make any estimate at all. Doubtless his may be taken to be as accurate as anything of that kind can ever be. He does not attempt to as much as approximate the amount of gas which is or may be under the larger acreage which he classes as possible gas territory.

WHAT IS THE VALUE OF PLAINTIFF'S GAS RESERVES.

The plaintiff undertook in three different ways to prove the present value of its Gas Reserves.

THE VALUATION BY MR. DAVIS.

The first was by the method used by Mr. Davis. That gentleman first satisfied himself that there was at present a market for such gas in and around Pittsburgh, in which locality he was convinced, steel mills, would pay 35c per M. C. F. for it. He believes that in the future it will probably command a higher price but in his calculations, he ignores that possibility. In transporting the gas from Cedarville, W. Va., to Pittsburg, there will be some loss by leakage. It will also cost, according to Mr. Uebelacher, 3.26c per M. C. F. to transport the gas from one place to the other so that he figures the difference in the value of the gas at Pittsburg and the cost in delivering the gas from Cedarville to Pittsburg to be 27.99c. He then figures out what in the past has been the cost of producing and delivering gas at Cedarville and estimates what it will probably be in the future. By deducting these costs per M. C. F. from the 27.99c, he determines the profit which he thinks the plaintiff will make on each M. C. F. of gas which it may sell. In calculating the expense of producing and delivering the gas in the years to come, he makes allowance for the probable upward trend in the cost of production. Having ascertained in this way, the probable profit in each particular year from 1924 to 1941, each inclusive, he reduces that amount to its present worth by using a discount figure based upon an 8% value of money. The sum total of these yearly profits so reduced to present worth, is $32,458,129.17, and that he figured was the actual value of the gas at the end of 1923. It should be noted, however, that of this

$32,458,129.17, a sum which we figure to be $4,967,291.46, was the profit Mr. Davis calculated the plaintiff would earn during the eight years immediately subsequent to 1923, upon the gas which it did not own, but which it had contracted to buy. That amount is not a part of the present worth of the gas belonging to the plaintiff. Deducting it from the total given by Mr. Davis, leaves the valuation for the gas plaintiff owns, $27,490,837.71. Whether plaintiff's contracts to purchase gas at favorable rates should be regarded as part of its property upon which it is entitled to a return, may be an open question, but if it is, it was never raised in such a way as to call the attention of the State Court, the Commission or ourselves to it. The writer of this opinion did ask Mr. Davis when on the stand, why he included the gas purchased in his calculations. From his answer at the time, we did not understand the matter was of much importance as it is. Doubtless, it was our fault that we did not. In any event, the fact that the plaintiff can buy gas at a price which according to the calculations of Mr. Davis would yield it such a large profit in the open Pittsburg market, suggests, at least, that such a figure is not so certainly obtainable as Mr. Davis assumes it to be, for if it be, plaintiff's sellers would not perhaps have been so willing to make it so large a present. Moreover, it is under contract, during 1924, 1925 and 1926, to sell large quantities of gas to the Hope Gas Co., and the West Virginia Gas Co., at a price per M. C. F. of 22.65c.

The future may show that he is right in supposing the natural gas for the next eighteen years will be salable at Pittsburg for an average price of not less than 35c per M. but it is not something about which anybody can be certain. It depends upon what shall be the relative costs of other fuels or means, electric or other, of obtaining heat, the continued activity of the steel business and

many other equally unstable factors. Moreover, the conclusion of Mr. Davis that gas will now and for the future command 35c in Pittsburg, if true, has a possible significance apparently not dreamt of in connection with plaintiff's contention.

If plaintiff's gas delivered at Cedarville is really worth the figure Mr. Davis thinks it is, the return which its two stockholders receive from it is in fact much higher than the Commission assumed. In 1923, they took from it 17,613,173 M. C. F. At the price which Mr. Davis says it was worth, that is 27.99c, they would have paid for it ..... $ 4,929,927.12
They actually paid 1,282,100.69

or ..... $ 3,647,826.43
less than according to him, was its real value. Deducting therefrom 12½% for Federal income tax, or 455,978.31

there is left ..... $ 3,191,848.13
or $1,048,186.67 more than the amount which the Commission added on that account to plaintiff's net income. This sum is 11.65% on ..... $ 8,997,310.48
and the Commission's total, is sufficient
to pay that return upon $58,858,872.27
It would seem to follow that if Mr. Davis was right in concluding that plaintiff could get 27.99c a thousand for its gas, it really earned in 1923 a fair return upon no less than $67,856,182.65, which is about all that either the plaintiff or any one else claims that the property used in the gas department of its business is worth.

It should be said that while Mr. Davis, as has been before stated, figured the amount of gas under what he classed as proven and probable acreage at 663,700,000 M. C. F., for some reason in valuing it, he figured on the

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worth of but 636,100,000 of it. If we apportion his total valuation when corrected by deducting from it the profit on purchased gas included therein, between the proven and the probable territory in the ratio he originally calculated to be under them respectively, that is to say, 37.53% under the proven and 62.47% under the probable, the result will be a value under proven of $10,317,311.39 and under the probable of $17,173,526.32.

THE VALUATION BY MR. UEBELACHER.

Mr. Uebelacher proceeded upon the theory that "the measure of the value to the owner or lessee of the gas in the ground is the difference between the prevailing market price at which such owner or lessee can purchase gas delivered to the field mains and the cost to such owner or lessee of purchasing and maintaining in its own wells, an equivalent supply of gas at the same point of delivery." He made elaborate calculations to determine that difference and concluded it was 5c. The accuracy of this determination is not susceptible of absolute demonstration. Some of the factors which were used in arriving at it were not in themselves altogether certain and in ascertaining them, there was plenty of room for the exercise of individual judgment. He was an expert witness for the plaintiff and as such, doubtless subject to some subconscious bias in its favor. On the other hand, there is no reason to suppose that he did not try to be fair, and there is no room for question that he was both able and painstaking.

Having made up his mind that the plaintiff could get gas from its own wells at 5c per thousand cheaper than it could buy it, he assumed that it was easy to say what the present value of plaintiff's gas reserves was. All that he thought necessary was to multiply the quantities of thousands according to the estimate of Mr. Davis by

5¢ and accept the result. In this way, he valued the gas under the proven territory at $12,455,000
and under the probable at 20,730,000

or a total valuation for both of $33,185,000

It will be recalled that Mr. Davis, although he dealt with the problem in a radically different way, arrived at almost precisely the same valuation. His figures were $32,458,129.17. The difference between him and Mr. Uebelacher is only $726,870 or less than 2¼%. This agreement would be very impressive were it not that each bases his figuring upon what he assumes is the price which can be obtained for gas at Pittsburgh. Unless one or the other or both of the methods used are fallacious, a concurrence of result would have been impossible unless they had been at one as to the one factor which was common to both. Now it is a striking illustration of the uncertainty of such calculations as they have severally made that instead of agreeing as to the Pittsburgh price, Mr. Davis assumed that it was and would be 35¢ per M. C. F. while Mr. Uebelacher estimated it at 30¢. This price is to be paid at intervals over eighteen years and Mr. Davis has figured for us that every dollar so received has a present worth of 61.64¢ so that an average difference of price of 5¢ per M. C. F. over the entire period should make a difference of 3.082¢ on the present worth of each thousand feet of plaintiff's reserves or for the 663,700,000 M. C. F. of $20,455,234. As Mr. Uebelacher based his calculations upon a price of 30¢ at Pittsburgh, his totals should have been that much less than those of Mr. Davis who more optimistically assumed that 35¢ a thousand could be obtained at that point for it. We have seen that in fact they were $726,870 more.

Perhaps if this case shall go further an examination of the detailed calculation of each of the gentlemen and a

more extensive study of them than we have been able to give, will explain the apparent discrepancy which for the present makes it difficult to give either of them the weight to which by possibility one or the other or both of them may be entitled. That, however, in the first instance will be work for a Special Master.

THE VALUATION OF WITNESSES IN THE GAS BUSINESS.

Among the witnesses who testified before the Commission were five practical gas operators who have bought, sold, leased or managed gas properties in or near the territories where the plaintiff's holdings are. One of these valued the plaintiff's gas reserves under all its territory, proven, probable and possible, at $30,000,000, one at $34,000,000, a third at $35,000,000, the fourth who originally testified to a valuation of $39,000,000, subsequently, for reasons to be presently stated, reduced his total to $31,250,000. The fifth of these gentlemen said that the plaintiff's gas holdings were worth $45,000,000. The average for the first four, taking the corrected figures for the one who reduced his original valuation, is $32,500,000, a figure very close to those given by Messrs. Davis and Uebelacher for the gas under the proven and probable territory alone. These business witnesses were all highly competent men. Every one of them is, however, interested in natural gas companies. Perhaps, it would be not unnatural to suspect that they are inclined to think well of properties similar to that of which they are part owners. It is scarcely possible that their judgment remains altogether uninfluenced by the fact that the judicial decision of some of the questions raised in this case may be of great importance to their own companies.

The worth of such properties depends upon many con-

tingencies, some of them difficult or impossible to foresee. For example, as already mentioned, one of the witnesses first placed a valuation of $39,000,000 upon plaintiff's gas holdings, but subsequently reduced that total by one-fifth or to $31,250,000, because in the meantime, another large company had come or had arranged to come into the territory in which plaintiff's properties lie.

CONCLUSION AS TO THE VALUE OF PLAINTIFF'S GAS RESERVES.

It is not easy to value plaintiff's gas holdings. As has been shown every one of the various methods by which the plaintiff has attempted to do so is open to serious criticism. No one leaves upon the mind the conviction of certainty or finality. Doubtless as a whole, the rights are worth a good deal more than the plaintiff paid for them and they may approximate three times as much as the most they ever cost it. For reasons to be presently stated we do not think we are called upon to make a definite finding on that question.

HOW MUCH OF PLAINTIFF'S GAS RESERVES ARE USED IN THE PUBLIC SERVICE.

The plaintiff at a net cost of a few millions acquired rights which it claims have now a value of upwards of thirty and which it might be difficult to deny, were worth two-thirds of that sum. What proportion of this is presently used and useful in the public service? Roughly, four-fifths of the valuation it puts upon them is represented by gas which upon reasonable grounds it believes to be under land in which it has not yet operated and nearly two-thirds under acreage underneath which it has not yet been demonstrated that there is any gas, although its presence there is probable. Plaintiff is not to be criticised for acquiring these rights widely extended and

largely untested as they are. In securing them, it doubtless acted wisely both from its own standpoint and from that of those who depend upon it for their supplies of gas. But, is that of any present importance?

The plaintiff denies that it can properly be limited to a return upon its investment and cites decisions of controlling force in support of its position. Its right to relief is nevertheless absolutely dependent upon its being able to maintain the position that it is entitled to a fair return upon the present value of such of its property as is used and is useful in the public service. Whether it showed good judgment in acquiring and holding any other property is irrelevant to any issue upon which it here seeks a decree. No part of the gas which is supposed to be under the acreage classed as either probable or possible is "used" in the public service or for that matter in any other, in any ordinary sense of that word.

Mr. Davis, as we have seen, valued the gas owned by the plaintiff and under the 136,834 of proven territory, operated and unoperated at $10,317,311.39. On December 31, 1923, plaintiff was operating only 68,981 acres or 50.58% of these. The total supply of gas under this operated territory calculated according to his methods was then 124,994,780 M. C. F., and was worth, he estimated, $5,218,496.50. There was under the acreage which he classed as proven but not operated an additional 124,105,220 M. C. F. valued by him at $5,098,814.89. If we are right in our understanding of his testimony, it would perhaps be possible to claim that all of the gas in both classes was tributary to the territory which was in operation, in the sense that the plaintiff was drawing from the pools containing it. It will be noted that the total of the gas underlying the proven acreage was 249,100,000 M. C. F. As the plaintiff sells annually about 47,000,000 M. C. F. of which 10,500,000 goes to the West Virginia retail purchasers, it has under its proven

territory gas enough for everybody for more than five years and an amount sufficient to meet the needs of its public service patrons alone for almost a quarter of a century.

For the reasons already stated, we cannot see how any other portion of its gas can be held to be used in the public service, no matter how elastic a definition be given to the word "used". At the risk of tiresome repetition, we can say that we do not criticise plaintiff for acquiring any or all its gas rights. It was doubtless wise to get them. All that we decide is that in arriving at the rate base upon which plaintiff is entitled to a fair return, we may not combine two opposing theories. We are not justified in saying that because plaintiff's investments in gas reserves were prudent, those reserves immediately went into use and that therefore plaintiff is entitled to have them appraised at the many times higher value it says they now have. If in dealing with its tangible property and going concern value, we are required to ignore, except for check purposes, plaintiff's investment in them, we must apply the same rule to its gas services.

If we are right $10,317,311.39 is the highest valuation which can be put upon such portion of plaintiff's reserves as it has any claim to include in its rate base. Even that much can be allowed only upon the assumption that any considerable part of these reserves is in use in the same sense as are pipe lines, pumps, compressors and many other things. But, is that assumption correct? The ordinary public utility is essentially the supplier of a service, whether it is also a manufacturer or even to a limited extent a merchant. This is true, although it may furnish something such as artificial gas or electricity which is also an article of merchandise.

The peculiarity of the instant case is that the plaintiff not only serves its domestic and retail customers in West

Virginia as any other utility would do, but that it is also engaged on a very large scale in the business of selling to them and to others, principally to the latter, an article of which it has accumulated a supply ample for a number of years to come, but which is consumed in the use and cannot be replaced except possibly by the acquirement from others of additional supplies out of the definitely limited quantities now in existence. If it bought from someone else the gas which it distributes in Charleston, Huntington and other West Virginia places, what it paid to the seller would form a part of its operating costs at least whenever it and the seller had no connection with each other and dealt at arms length. In that event, the value of the gas reserves owned by the concern which sold the plaintiff gas would have nothing to do with the value of the latter's property used and useful in the public service.

Is it clear that the situation in this respect is different merely because the plaintiff owns the gas it furnishes? If it is not, we are not here concerned with the valuation which may be placed upon plaintiff's gas reserves or upon any important part of them. Upon the assumption suggested, Commissions and Courts, when called upon to deal with the rates which the plaintiff is entitled to charge would, as in other like cases, have to determine the value of the plaintiff's tangible property used in the public service including therewith a sufficient allowance for working capital and going concern value. The total of these items would represent all upon which it would be entitled to earn a return and all upon which any allowance for depreciation and amortization should be made. Having determined what the plaintiff's gross income is, precisely as they would in any event have to determine it, they would add the fair market value of the gas it delivers to its public service customers to what they had ascertained to be its outlay for operating expenses and taxes.

It would then be necessary to determine whether such net income as so calculated after making proper allowance out of it for depreciation and amortization, was sufficient to yield plaintiff a fair return upon the value of its property. However plausible this view may be, it does not seem to have occurred to any of the parties to the cause nor to any of the learned counsel engaged in it. So far as we can recall, no reference has ever been made to it by the Commission nor by the Supreme Court of Appeals of the State. The presumption against it is, therefore, strong, but on the other hand, it has something of apparent reasonableness about it for West Virginia cannot require plaintiff to sell its gas in the State if it can get a higher price elsewhere. Pennsylvania vs. West Virginia, 262 U. S. 553, 559. If it be sound, there will be no need to seek a solution of a number of problems which are difficult or impossible to solve. At present we do no more than propound it, so that in the further proceedings in the cause, it may be given such consideration as it may merit, if indeed it be worth any at all.

THE MAXIMUM VALUATION OF THE PROPERTY UPON WHICH THE PLAINTIFF IS ENTITLED TO A RETURN.

We have heretofore stated that we were satisfied that the value as of December 31, 1923, of all the plaintiff's property other than its gas reserves did not exceed $29,900,000.00

The highest possible value which on the day named could be put upon such portion of its gas reserves as could by any possibility be considered as then used in the public service was 10,317,311.39

The total of these sums, or $40,307,311.39

is the maximum upon which the plaintiff was then entitled to a return. We do not fix that amount as its rate base. We can not do so without answering some questions which we have purposely left open. All that we decide is that upon the record before us a higher figure would be unjustified.

PLAINTIFF'S BUSINESS AS A WHOLE YIELDS A FAIR RETURN.

We have already ascertained that the net income which in the year 1923 it earned for its stockholders, was sufficient after providing for depreciation and amortization, to pay a fair return upon at least $53,295,278.24. While it is true that if all plaintiff's contentions were accepted at their face value, it might be possible to argue that its business as a whole did not pay it a fair return as it calculates such a return, yet it has never claimed that its entire operations considered as a unit, have been unprofitable in the ordinary sense of that term. Indeed it could not. It, or a substantially identical predecessor, was organized in 1903 but it did not begin operations seriously, if at all, until some time in 1909 when it took over the properties of two or three previously existing corporations. How much actual money was ever put into it is not quite clear. The aggregate did not exceed $6,000,000 and it may well have been less. Until April, 1916, it paid no cash dividends, but between that time and the end of 1923, its stockholders have in that way received a total of $28,024,900. Indeed as has already been mentioned, that is not all which they have had from it. In the last few years, as has been stated, it has made a practice of selling much gas to them at prices admittedly greatly below the market, to their advantage in a sum which will run into the millions and which the protestants not without reason, argue amounted to as

much as $7,655,722.32. It follows that in the fourteen years and a half since its organization its stockholders have taken out of it somewhere between $30,000,000 and $35,000,0000 in money and money's worth or from five to six times as much as they say they put in it, nor if their view be accepted, have they beggared it in the process. They claim that on the last day of 1923, the fair value of that portion of its property which they have left to it and which is used in the gas department of its business was at the lowest $66,070,496.00
while it owed only 12,060,343.34

so that its net worth was at least $54,010,152.66
or nine times the utmost they ever entrusted to it. Moreover, if we correctly understand the figures submitted, this sum leaves altogether out of account an additional $13,343,176.15 of value, which it says is the worth of the property it uses in the other departments of its business and which is also the product of the original $6,000,000 its stockholders invested in it. It has not proven an unprofitable servant.

The large valuation it places upon the holdings is, in spite of the fact that it has sold from its own wells over 400,000,000 thousands of cubic feet of natural gas, a commodity which does not reproduce itself and which perishes in the using. Its expert witnesses we know say that it has 663,000,000 thousands of cubic feet still left. Even if they are right, it has already sold more than a third of all the gas it ever had and they assert that on the thirty first of December, 1923, its property was still worth nine times as much as they originally put into it. It is the story of the Sybilline books put into modern dress.

None of this the plaintiff says, has anything to do with the case. It asserts that the exceptional good fortune which has come to it in the way of an unusual increase

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in the value of the property it is using in the public business, justifies it in saying that rates are confiscatory which would have been entirely fair had it had no better luck than that which falls to the lot of most mortals. To any suggestions that it is seeking to have fulfilled for its benefit the prophecy that to him that hath shall be given, it answers that it is entitled to rates which will pay a fair return upon the value of its property used and useful in the public service for which the charges are made as that value stands at the time those rates are in force. In its view, it is immaterial how much value compares with the prices it paid for its property. That circumstance and others of a similar kind, it contends, are relevant only for such light, if any, as they may throw upon present worth.

THE REGULATED PORTION OF PLAINTIFF'S BUSINESS.

If we are correct in the conclusions to which we have thus far come, there is no occasion for any one to challenge these positions of plaintiff even if it be assumed that any of them are open to controversy, with the possible exception of the implication that its regulated and unregulated business are to be regarded as distinct entities.

It furnishes gas to two kinds of customers. A little more than one-fifth of all it produces or buys from others, it distributes directly to industrial and domestic consumers in West Virginia. A smaller amount goes to the like kind of patrons in Kentucky and Ohio. It sells the remainder to certain wholesale customers, individuals and corporations who for the most part are not themselves its ultimate users but who transport, distribute and sell it at retail in States other than West Virginia. It says that the former portion of its business does not

yield a fair return whatever may be the case with reference to the latter. Its adversaries claim that so long as what it gets from its gas business as a whole is profitable, it cannot say its property,or any part of it, is being confiscated or is being taken from it without due process of law. They assert that it is well settled that it is a public service corporation as to all of its gas business. Clarksburg Heat & Light Co. vs. Public Service Commission, 84 W. Va. 638, Carnegie Natural Gas Co. vs. Swiger, 72 W. Va. 557; Peoples Natural Gas Co. vs. Public Service Commission, 279 Pa. 252. It could not have constructed its miles of pipe line if everybody had not known that it could on occasion exercise the power of eminent domain. Without such means of transmitting its gas, it could not carry on either branch of its business. The fact that the Commission has not seen fit to regulate its wholesale prices and has not interfered to prevent its discriminating among its wholesale customers by selling to one at one price and to another at a very much higher or lower one, is immaterial. If, as it claims, the rates it is forced to allow its retail customers discriminate unfairly against its wholesale, the *latter* may have a right to complain, but *it* may not so long as in the aggregate it is getting a fair return upon all its property used and useful in the public service.

It answers that for the Commission to compel it to make a present of any part of the value of any of its wares to anybody is to take from it property without due process of law. The question is important. Is it necessary to answer it?

THE REGULATED PORTION OF ITS BUSINESS. NET INCOME.

There is little difficulty in ascertaining the gross earnings of the regulated portion of its business. In 1923

1927

they were	$2,307,051.00
to which should be added a proper proportion of the plaintiff's gasoline earnings, which it is agreed is	234,626.00
so that the total gross income of the plaintiff's regulated business in the year named was	$2,541,677.50
Subject to a reservation presently to be mentioned, it is admitted that its operting expenses and taxes amounted to	986,084.00
Thus leaving a net income of	$1,555,593.00

The reservation mentioned is as to an item of $147,945, a part of a still larger sum which the plaintiff expended in the payment of delayed rentals to preserve its leases or options in unoperated territory. It is admitted that if the plaintiff is entitled to include such outlay in its costs of operation the amount above named is properly chargeable to the public service portion of its business.

From what has been said, it is clear that we cannot hold that they, or any of them, are charges upon the property of the plaintiff used and useful in the public service. It may not, however, necessarily follow that they are not expenses which a utility situated as the plaintiff, may in good faith, pay out of and properly charge against its current operating income. It is another of the questions which as they need not be decided, we content ourselves with noting.

It may be said that the total of these delayed rentals amounting to $589,186 were included in the operating expenses which we deducted from the plaintiff's gross income from its entire gas business in order to arrive at the net sum available for depreciation, amortization and return. Had we done so, the net income would have

been sufficient to provide for these charges on a valuation of five million higher than has heretofore been calculated.

If we deduct from the net income of the regulated portion of its business $1,555,593.00
the proper proportion of the total sum allowed for annual depreciation, or say 113,658.00

There is left $1,441,935.00
a sum sufficient to yield a return of 11.65 on $12,377,124.42

VALUE OF PROPERTY USED IN REGULATED BUSINESS.

What, on the 31st of December, 1923, was the fair present value of that part of plaintiff's property used in the regulated portion of its business? We have found that all of its tangible property was not worth more than $26,000,000
The parties have agreed as to percentages of the value of various portions of this property properly allocated to its public service activities. Applying them we find that of such $26,000,000, approximately 7,530,826
will represent the highest valuation which can be put upon the tangible property used in the part of plaintiff's business with which we are now concerned.

Of the $3,000,000 allowed as going concern value 847,350
belongs in the same category.
As does 282,546
of the $990,000 of working capital.
The total is $8,660,822
Of the $10,317,311.39 which is the highest valuation which we have found we

could put upon plaintiff's gas reserves, upon the assumption that any appreciable part of them may be included in its rate base, there should be allocated to the regulated portion of the business 2,590,677

It follows that the total value of plaintiff's property of all kinds used and useful therein did not exceed $11,251,499

As the plaintiff received from this part of its business an income sufficient to pay a return upon $12,377,124.12

or 1,125,624.12

more than the maximum worth of its property used therein, we cannot hold that the Commission erred in denying it an increase of rates.

APPLICATION OF AMORTIZATION RESERVES.

We have not overlooked that fact in the view of the Commission, or at all events, of that member of it who delivered the principal opinion, account should be taken of the reserve which the plaintiff has already accumulated for purposes of amortization. The plaintiff's rates have been for years fixed by the Commission. They purposely have been made high enough to permit the laying aside of huge sums for amortization, and the plaintiff either has them, or has distributed them among its stockholders. It says these facts, if facts they are, are immaterial to any question before the Court. Its theory perhaps is there is a new taking of its property every time there is an attempt made to raise or lower a rate and whether it has in its depreciation or amortization reserve any sums large or small, is beside the mark. We state the position of the parties. The exigencies of the case do

not require that we should express any opinion upon them and we do not.

CONCLUSION.

In our consideration of the case, for income and outgo, we have used the figures for the calendar year 1923. If the case shall go to final hearing and a reference be had to a Special Master, either of the parties will, of course, be free to bring everything down to a convenient date, say the end of 1925 or any later date that would be practical.

This opinion has been too long delayed and is of inordinate length. In the way we approached the consideration of the case we were called upon to deal with numberless figures scattered through many exhibits. We have been tempted into not a few calculations. It is not only possible but probable that we have fallen into arithmetical as well as other errors. All that we can say is that from the best consideration, we have been able to give to the case, we do not feel that the plaintiff has shown that it is entitled to a preliminary injunction. Upon final hearing, we shall not necessarily consider ourselves bound by any of the findings of fact or conclusions of law herein contained. All of them will then be open to further consideration.

As the record now is, the motion for an interlocutory injunction must be denied.

McDowell, District Judge, dissents.

[fol. 1529] In United States District Court

[Title omitted]

Judgment—May 10, 1926

This cause having been submitted on the 18th day of May, 1925, to the undersigned, sitting under the authority of Section 266 of the Judicial Code, upon the motion of the plaintiff for an interlocutory injunction, enjoining, inhibiting and restraining the defendant The Public Service Commission of West Virginia and the members thereof as named in the bill, from interferring or preventing the plaintiff from putting in effect its rates for natural gas service as filed before said Public Service Commission, was heard by the undersigned at said time upon the bill and the exhibits therewith filed, the answer of the defendants, as well as the answer of the intervenors, filed herein by formal order entered herein; and, by agreement of the parties, upon all of the evidence, exhibits, documents and writings introduced before the Public Service Commission of West Virginia upon the hearing before that body, which, by agreement of the parties, are, as to the evidence of the witnesses, to have the same force and effect as if said witnesses were personally present and testified before this court, and the said documents to have the same force and effect as if they were now originally introduced with the testimony of said witnesses; and upon the further testimony of witnesses and of documents offered in open court before the undersigned upon said hearing; and upon all of the matters upon which the undersigned Judge of the District Court of the United States for the Southern District of West Virginia heard said cause upon the motion for a temporary restraining order, as shown by the order entered herein.

And all of the matters arising upon said motion for an [fol. 1530] interlocutory injunction having been fully considered, the said motion is, for reasons stated in writing and filed with the record herein as part hereof, denied. The opinion of the court, prepared by Circuit Judge Rose,

was concurred in by District Judge McClintic. District Judge McDowell dissented.

John C. Rose, Circuit Judge. George W. McClintic, District Judge.

[fol. 1531] In United States District Court

[Title omitted]

Petition for Appeal

The petition of United Fuel Gas Company, a corporation, plaintiff herein, respectfully represents:

That the plaintiff is aggrieved by the judgment and decree rendered herein on the — day of May, 1926, in favor of the defendants, refusing to issue an interlocutory injunction as prayed for in the bill in this case, and the said plaintiff, for the reasons specified in the assignment of errors filed herein, desires to appeal from said decree to the Supreme Court of the United States.

Wherefore your petitioner prays that said appeal may be allowed, on its giving bond in the amount to be fixed by this court; that said appeal may be made returnable to the Supreme Court of the United States, according to law; and that a transcript of the record, proceedings, papers and exhibits upon which said decree was rendered, [fol. 1532] duly authenticated, be sent to said Supreme Court of the United States. And your petitioner prays for all general and equitable relief.

Harold A. Ritz, Solicitor for Plaintiff.

[fol. 1533] In United States District Court

[Title omitted]

Assignments of Error

The plaintiff above named prays an appeal from the decree of this court in the above styled action, denying to it an interlocutory injunction as prayed for, to the Supreme Court of the United States, and assigns for error:

First. The court erred in holding that 3.65% of the value of plaintiff's property as found by said court, would be a generous allowance for amortization. This finding is on the basis that the plaintiff's property has a life of eighteen years, while the court later finds that the gas supply of the plaintiff, used and useful in the public service, will only last for five years with the plant operating as at present, and if it has a gas supply used and useful for the public service for only five years, the plant, then, should be amortized within that time. If, on the other hand, it is said that the gas supply found to be used and useful in the public service will be sufficient for a twenty five year sup- [fol. 1534] ply for the public service consumers in West Virginia, then all of the expense of operation of the plant, as well as the return on the entire investment, should be charged to the public service consumers of West Virginia. If the plant is to be amortized in five years, the life of the supply of gas found by the court, the rate would have to be far in excess of that asked. If, on the other hand, the gas supply is to be all attributed to the public service in West Virginia and all of the Company's operations limited to that service, the rate for gas would have to be much higher than that asked in order to pay the expense of operation and rate of return on the entire investment.

Second. The court erred in ascertaining the plaintiff's earnings by adding to the earnings reflected on its books the sum of $2,143,691.46, the amount which it should have, according to the court's interpretation, charged to its stockholders for gas furnished to them in addition to the amount which it did actually charge. This amount is ascertained by fixing the price which it should have charged to these stockholders for the gas delivered at one point by wholesale at 22½ cents per thousand cubic feet, and results in compelling the plaintiff to charge its own stockholders a much higher rate for gas than it is required to sell the same gas for to public service consumers in West Virginia, while the gas sold to such public service consumers at 20 cents per thousand cubic feet is delivered to each of them at their respective residences and many thousands of collections made in order to secure the same amount of money that is derived from one delivery and one collection from the plaintiff's stockholders.

Third. The court erred in including in the earnings of the plaintiff $934,393.41 as profit on gasoline extraction. [fol. 1535] The business of extracting gasoline is entirely separate from that of marketing the natural gas, and is done under a contract by which the plaintiff receives one-eighth of the gross returns from such gasoline, and this one-eighth is reflected in the accounts of the plaintiff. There is no showing that this contract is not entirely fair. If, however, it be conceded that the plaintiff is entitled to have, as part of its earnings, one-half of the net profits from the gasoline business, it was erroneous to take such one-half of the net profits of an extraordinary year as shown by the record, instead of the net profits of a normal year, which are shown by the record to be $516,000.00 instead of $934,393.41.

Fourth. The court erred in its findings that the value of the plaintiff's tangible property, including going concern value and working capital, was no more than $29,980,000.00.

Fifth. The court erred in finding that the value of the gas lands owned by the plaintiff and held by it under lease, used and useful in the public service, was not more than $10,317,311.39.

Sixth. The court erred in not including in the valuation of plaintiff's tangible property the sum of $2,044,778.21, which the record of the hearings before the Public Service Commission of West Virginia shows was added to said property during the year 1924.

Seventh. The court erred in finding that the value of plaintiff's property devoted to the public service in West Virginia was no more than $11,251,400.00. This value is based upon the values found by the court for the whole of plaintiff's property, in which it is claimed, as before indicated, the court erred.

Eighth. The court erred in determining that 8% return [fol. 1536] was a fair rate of return upon the value of the property used and useful in the plaintiff's hazardous business.

Ninth. The court erred in determining that $404,223.00 a year was an adequate allowance for depreciation reserves.

Tenth. The court erred in holding that the rate allowed to the plaintiff for gas delivered to its public service consumers in West Virginia produces a fair return on the investment or value of the property properly assignable or attributable to the West Virginia public service business.

Eleventh. The court erred in not holding that the plaintiff was entitled to a fair return upon its investment devoted to the public service in West Virginia, regardless of whether or not it was receiving a fair profit from its other business sufficient to make the whole of its business profitable.

Wherefore plaintiff prays that the said decree be reversed, with directions to enter a decree as prayed in plaintiff's original bill herein.

Harold A. Ritz, Solicitor for Plaintiff.

[fols. 1537-1539] Bond on Appeal for $2,000 approved; omitted in printing.

[fol. 1540] In United States District Court

[Title omitted]

Order Allowing Appeal—May 10, 1926

Upon considering the foregoing petition, this day presented, it is ordered that an appeal be allowed to the United Fuel Gas Company, a corporation, the petitioner herein and plaintiff in this action, from the decree of May —, 1926, rendered against said plaintiff in the above entitled cause, and that said appeal shall be returnable to the Supreme Court of the United States, upon the giving of an appeal bond by said plaintiff in the penalty of Two Thousand Dollars, and that a transcript of the record, including all of the exhibits offered in evidence by either party, be filed in the Supreme Court of the United States, according to law, as prayed for.

John C. Rose, Circuit Judge. George W. McClintic, District Judge. Henry C. McDowell, District Judge.

[fols. 1541 & 1542] Citation, in usual form, showing service on Paul W. Scott et al., omitted in printing.

[fol. 1543] In United States District Court

[Title omitted]

Order Extending Time—May 26, 1926

The plaintiff, United Fuel Gas Company, in the above entitled cause, having been allowed an appeal from the decree entered herein refusing it a temporary injunction, which appeal is returnable before the Supreme Court of the United States on the 9th day of June, 1926, and it appearing that it may not be possible to secure a transcript of the record to be lodged in the said Supreme Court of the United States on or before the said 9th day of June, 1926, it is ordered that the time within which said transcript may be made up and filed in said Supreme Court is hereby extended for thirty days from the said 9th day of June, 1926. And it also appearing that it may not be possible to get the narrative of the evidence made up as provided by the rule of said Supreme Court, within the the said thirty days, the time within which said narrative of evidence shall be made up and filed is likewise extended for thirty days from said 9th day of June, 1926.

John C. Rose, U. S. Circuit Judge. Henry C. McDowell, U. S. District Judge. Geo. W. McClintic, U. S. District Judge.

[fol. 1544] In United States District Court

[Title omitted]

Stipulation re Transcript of Record

The undersigned counsel for the parties in the above entitled cause, hereby stipulate and agree that in making up the transcript of the record for the appeal herein the Clerk shall include in said transcript the following:

1. The bill of complaint and Exhibits "A" and "B" and Exhibit "P. S. C. Opinions," filed therewith.
2. Answer of the named defendants.
3. Answer of the intervenors.
4. Order refusing temporary restraining order.
4a. Order convening special statutory court.
5. Narrative statement of the evidence and the exhibits made part thereof by reference thereto in said statement.
6. Opinion of Judge Rose.
7. Decree refusing temporary injunction.
8. Petition for appeal.
9. Assignment of errors.
10. Appeal bond and approval.
11. Order allowing appeal.
12. Citation and proof of service.
12½. Order granting extension of time for preparing record.
13. Praecipe and Clerk's certificate.

Harold A. Ritz, Counsel for Plaintiff. F. M. Livezey, Atty. for Public Service Commission; Howard B. Lee, Attorney General; Geo. S. Wallace, Atty. for Huntington Mfg. Club; Paul W. Scott, Atty. for City of Huntington; A. G. Stone, Asst. City Solicitor, of City of Charleston; Robert S. Spillman, of Counsel for Certain Intervenors, Counsel for Defendants and Intervenors.

[fol. 1545] Clerk's certificate to foregoing transcript omitted in printing.

[fol. 1546] In United States District Court

[Title omitted]

Order Extending Time to File in U. S. Supreme Court May 28, 1929

The plaintiff, United Fuel Gas Company, in the above entitled cause, having been allowed an appeal from the decree entered herein refusing it a temporary injunction,

which appeal is returnable before the Supreme Court of the United States on the 9th day of June, 1926, and it appearing that it may not be possible to secure a transcript of the record to be lodged in the said Supreme Court of the United States on or before the said 9th day of June, 1926, it is ordered that the time within which said transcript may be made up and filed in said Supreme Court is hereby extended for thirty days from the said 9th day of June, 1926. And it also appearing that it may not be possible to get the narrative of the evidence made up as provided by the rule of said Supreme Court, within the said thirty days, the time within said narrative of evidence shall be made up and filed is likewise extended for thirty days from said 9th day of June, 1926.

John C. Rose, U. S. Circuit Judge. Henry C. McDowell, U. S. District Judge. Geo. W. McClintic, U. S. District Judge.

A true copy from the record.
Attest:

Ira E. Mottesheard, Clerk. (Seal.) (District Court United States, Southern District West Virginia.

[fol. 1347] [File endorsement omitted]

[fol. 1348] In Supreme Court of the United States

Statement of Points to be Relied Upon and Designation by Appellant of Parts of the Record to be Printed with Proof of Service. Filed June 8, 1926.

In accordance with the provisions of Paragraph 9 of Rule 11 of this court, the appellant here states and declares the points upon which it intends to rely and parts of the record which it thinks necessary for the consideration thereof to be as follows:

First Point

The holding of the court that 3.65% per year of the value of plaintiff's property is a generous allowance for

amortization is grossly inadequate for that purpose, upon the basis of the values found by the said court.

The decision of this point requires the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and the intervenors, the evidence of Charles F. Uebelacker, Ralph E. Davis, T. O. Sullivan, John B. Corrin, T. B. Gregory, J. C. Blair, James J. Cabot, G. A. Cunningham, John Davidson, L. B. Denning, John L. Dickinson, H. O. [fol. 1549] Dunfee, M. S. Fouts, D. E. Goode, Ben C. Grosscup, W. C. Hardy, N. R. Henderson, W. J. Hightower, D. C. Jay, D. A. Ketchum, Azel Meadows, S. W. Meals, E. A. Palmer, J. A. Peirce, Edward Reynolds, Jr., Ira G. Sayre, H. G. Scott, C. R. Varnum, H. A. Wallace, A. G. Womack, J. G. Ward, W. J. Hagenah, John Jirgal and C. E. Krebs, as shown by the narrative of evidence filed herein, as well as the various exhibits filed with the evidence of said witnesses as part of said narrative of evidence, as indicated therein, the opinion of Judge Rose filed herein, and the decree refusing the temporary injunction, and makes necessary the printing of all of said parts of the record above referred to.

Second Point

The court below was in error in adding to the earnings of the plaintiff and appellant as reflected by its books, the sum of $2,143,661.46 as additional compensation which should be charged to the parent companies on account of the gas delivered to them. The effect of this addition to the earnings of the plaintiff was and is to compel the appellant, in its dealings with the parent companies, to charge them a higher rate for gas at wholesale than it is permitted to charge to its public service consumers in West Virginia, at retail, after distribution.

The decision of this point involves the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and intervenors, and the evidence of Charles F. Uebelacker, W. J. Hagenah, John Jirgal and W. J. Hightower, as shown by the narrative of evidence filed herein, together with the exhibits made part of said evidence of said witnesses as indicated by said narrative of evidence, as well as the opinion of

Judge Rose filed herein, and makes necessary the printing [fol. 1550] of those parts of the record.

Third Point

The court below erroneously added to the earnings of the plaintiff and appellant the sum of $934,393.41 as profit on gasoline extraction.

The decision of this point involves the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and intervenors, and the evidence of Charles F. Uebelacker, W. J. Hightower, H. A. Wallace, John Jirgal, W. J. Hagenah and C. E. Krebs, and the exhibits filed with the testimony of said witnesses, all as shown by the narrative of evidence filed herein, as well as the opinion of Judge Rose filed herein, and makes necessary the printing of those parts of the record.

Fourth Point

The court's conclusion that the value of the plaintiff's tangible property, including going concern value and working capital, was no more than $20,[illegible], is erroneous.

The decision of this point makes necessary the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and intervenors, and the testimony of all of the witnesses as shown by the narrative of evidence filed herein, together with the exhibits attached to and made part of the testimony of said witnesses as shown by said narrative of evidence, and the opinion of Judge Rose filed herein, and makes necessary the printing of those parts of the record.

[fol. 1551] Fifth Point

The finding of the court that the value of the gas lands or rights owned by the plaintiff and appellant and used and useful in the public service, was not more than $10,317,311.39, is erroneous.

The decision of this point involves the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opinions" therewith, the answers of the defendants and intervenors, the evidence of all of the witnesses introduced

herein as shown by the narrative of evidence filed herein, together with the exhibits made part of the evidence of said witnesses as shown by said narrative of evidence, and the opinion of Judge Rose filed herein, and makes necessary the printing of all thereof.

Sixth Point

There should have been added to the value of the tangible property of the plaintiff and appellant the sum of $2,044,778.24, new investment made during the year 1924, in order to bring the said value down to the end of the year 1924.

The decision of this point involves the consideration of the evidence of W. J. Hightower and the exhibits therewith, and of John Jirgal and the exhibits therewith, and makes necessary the printing of the evidence of these witnesses and the exhibits with their testimony.

Seventh Point

The finding of the court that the value of the plaintiff's property devoted to the public service in West Virginia was not more than $11,251,499.00, is erroneous.

The decision of this question involves the consideration of the bill and Exhibits "A" and "B" and "P. S. C. Opin. [fol. 1552] ions" therewith, the answers of the defendants and intervenors, and of all of the evidence as shown by the narrative of evidence filed herein and the exhibits made part thereof as shown thereby, and also the opinion of Judge Rose filed herein, and makes necessary the printing of all of the record above referred to.

Eighth Point

The allowance by the court of an 8% return upon the value of the plaintiff's property as sufficient is complained of. This return should have been at least 10% upon the value of the plaintiff's property engaged in the hazardous business in which it is employed.

The decision of this point involves the consideration of the pleadings filed herein, of the evidence of Charles F. Uebelacker, L. B. Denning, John L. Dickinson, W. C. Hardy, H. A. Wallace, John Jirgal and W. J. Hagenah, as shown by the narrative of evidence, as well as the exhibits made

part of the evidence of said witnesses as shown by said narrative of evidence, and also the opinion of Judge Rose filed herein, and makes necessary the printing of those parts of the record.

Ninth Point

The court should have allowed more than the sum of $404,333.80 for the purpose of depreciation reserves for the plaintiff and appellant.

The decision of this point involves the consideration of the pleadings filed herein and of the evidence of Charles F. Teteslacker, W. J. Hightower, H. A. Wallace, W. J. Hagenah and John Jirgal, and the exhibits filed therewith as shown by the narrative of evidence filed herein, and the [fol. 1553] opinion of Judge Rose filed herein, and requires the printing of all of said matter.

Tenth Point

The plaintiff and appellant is not receiving a fair return upon the fair value of its property devoted to the public service in West Virginia, and the rates now prescribed will not produce such a fair return.

The decision of this point involves the consideration of the pleadings filed herein, the opinion of Judge Rose filed herein, and the narrative of evidence, together with the exhibits filed with the testimony of the witnesses as shown by said narrative of evidence, and requires the printing of all of said matter.

Eleventh Point

The court should have held that the plaintiff was entitled to a fair return upon its investment devoted to the public service in West Virginia, regardless of whether or not it was making a profit from its other business sufficient to make the whole of its business successful.

The decision of this point involves the consideration of the opinion of Judge Rose filed herein, and necessitates the printing thereof.

Harold A. Ritz, Counsel for Appellant.

Dated Charleston, W. Va., June —, 1926.

[fol. 1554] Legal service of the above and hereto attached Statements of Points and Parts of the Record to be Printed in the case of United Fuel Gas Company against the Public Service Commission of West Virginia, is hereby accepted on behalf of the appellees, this 8th day of June, 1926.

Robert S. Spilman, of Counsel for Interveners; Paul W. Scott, Atty. for City of Huntington; George S. Wallace, Atty. for Huntington Mfgrs. Club; A. G. Stone, Asst. City Solicitor, City of Charleston; Howard B. Lee, Attorney General; F. M. Livezey, Attorney for Public Service Commission, Counsel for Appellees.

[fol. 1555] [Endorsed:] File No. 32,006. Supreme Court U. S., October Term, 1926. Term No. 439. United Fuel Gas Co., appellant, vs. Public Service Commn. of West Virginia et als. Statement of points to be relied upon and designation by appellant of the parts of the record to be printed, with proof of service thereof June 8, 1926. Filed June 8, 1926.

Endorsed on cover: File No. 32006. S. West Virginia D. C. U. S. Term No. 439. United Fuel Gas Company, appellant, vs. The Public Service Commission of West Virginia, Burk S. Stathers, Ernest D. Lewis, et al. Filed June 8th, 1926. File No. 32006.

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IN THE

Supreme Court of the United States,

OCTOBER TERM, 1927.

NO. [redacted] 4 4

UNITED FUEL GAS COMPANY,
Appellant,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, *et al.*

BRIEF ON BEHALF OF APPELLANT.

JOHN W. DAVIS,
HAROLD A. RITZ,
DOUGLAS M. MOFFAT,
EDWARD L. PATTERSON,
Counsel for Appellant.

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IN THE

Supreme Court of the United States,

OCTOBER TERM, 1927.

UNITED FUEL GAS COMPANY, Appellant, vs. THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, *et al.*	No. 79

BRIEF ON BEHALF OF APPELLANT.

Prefatory Note.

This is an appeal from an order or judgment* of the District Court of the United States for the Southern District of West Virginia, dated May 10, 1926, denying the motion of the appellant for an interlocutory injunction enjoining, inhibiting and restraining the appellees, the Public Service Commission of West Virginia, and the members thereof from interfering with the appellant in putting in effect its increased rates for natural gas service, as filed with said Public Service Commission, and for other appropriate relief as prayed for in its bill (R., 24-6). The said order or judgment will be found at pages 1275-6 of the Record.

*So termed by the Court (R., 1275).

Opinion Below.

The opinion of the Court below is reported in 14 Fed. (2nd) 209, and also appears at pages 1230, *et seq.*, of the Record.

Jurisdiction of the Court.

This Court has jurisdiction of this appeal under Judicial Code, Sec. 266 (U. S. Code, Title 28, Sec. 380).

The specific claims advanced and rulings made in the lower Court which are relied on as the basis of this Court's jurisdiction, with a specification of such of the assigned errors as are intended to be urged, precede the Argument (p. 10, *post*).

In the language of the opinion of the lower Court (R., 1233):

> "Questions are raised, authoritative answers to which will affect public and private interests of far greater magnitude than those directly before us, considerable as the latter are."

History of the Case.

In the year 1917, appellant made an application to the Public Service Commission of West Virginia for authority to increase its rates for natural gas service. Provisional orders were entered in said proceeding from time to time allowing certain increases, and certain additional petitions were filed asking for additional increases, until finally, after observing the results of the provisional increases and provisional orders, the Commission, on February 20, 1923, entered an order granting an increase of five cents per thousand cubic feet for natural gas service (R., 161, *et seq.*). From this order of the Commission, the City of Charleston and other municipalities and other corporations, hereinafter referred to as the "protestants", prosecuted an appeal to the

Supreme Court of Appeals of West Virginia, which, on the 27th day of November, 1923, reversed the said order of the Public Service Commission and denied any increase in said rates. The Court's opinion is reported in 95 W. Va., 91; also in 120 S. E., 398.

A brief resume of the proceedings anterior to the filing of the later rate schedule involved in this case is contained in the opinion of the Court below herein (R., 1231).

The reversal by the Supreme Court of Appeals of West Virginia in the *City of Charleston* case, as will be found on examination of said opinion, was based on the conclusion that the evidence of value of certain items of this appellant's property (especially its gas properties, leaseholds and rights) was not sufficiently definite and certain to justify including those items of property in the rate base at anything more than their actual cost to it. The property referred to, as will hereafter appear, constitutes a very large part of appellee's assets, and the failure of the Court to include it at anything more than its actual cost so reduced the total value of the property that the Court found the existing rates to be compensatory. In that case, however, that Court did find that the Company was entitled to a rate which would furnish enough money to operate its business and give it a fair return on the present fair value of its property.

Upon the handing down of the opinion of the Supreme Court of Appeals, the appellant determined to have a complete appraisal and valuation of its property made by competent engineers and experts in order to overcome the criticism of its evidence by that Court, and also determined to support the evidence of such engineers and experts by the testimony of witnesses thoroughly familiar with the properties and with the natural gas business. To this end, it employed the well known firm of Ford, Bacon & Davis, who made an appraisal of the property as of December 31, 1923. It also employed Ralph E. Davis, a mining engineer and geologist admittedly of the highest standing, to make an

examination for the purpose of determining by approved scientific methods, as nearly as might be, the gas content of the properties owned and controlled by the appellant. On the completion of this appraisal by Messrs. Ford, Bacon & Davis, and of the work of Mr. Ralph E. Davis, a new schedule of rates was filed under the law with the Public Service Commission on April 25, 1924. This schedule is made Exhibit "B" with the Bill (R., 55, *et seq.*). Upon the filing of this schedule, the Public Service Commission, of its own motion, entered an order suspending the same, and set the case for hearing on May 28, 1924. On that date the appellant appeared and began the introduction of its evidence before the Commission, concluding the same about July 1, 1924. The case was then continued for several months upon the motion of the protestants, including the cities of Charleston and Huntington, for the purpose of allowing expert accountants and engineers employed by them to check the appraisement and inventories introduced by the appellant upon the hearing. After these experts had completed their work, the hearing was resumed and the case submitted to the Commission for decision. On March 24, 1925, it was decided by the Commission and the schedule of rates filed was cancelled (R., 1434), the Commission holding that the rates already in force were adequate to give appellant a fair return on the value of its property.

The Public Service Commission of West Virginia is composed of three members; each of whom filed a separate opinion. No two of them agreed as to the value of the Company's property, or as to the methods to be pursued in determining whether or not the rates proposed were fair and just. Two of said Commissioners, Chairman Stathers and Commissioner Divine, by separate processes, arrived at the conclusion that the proposed rates were too high, and that the rates then in force were adequate. Commissioner Lewis, the third member of the body, disagreed with this conclusion and was of opinion that the proposed schedule of rates

should have been approved. The opinion of Chairman Stathers will be found at pages 82, *et seq.* of the Record; that of Commissioner Divine at pages 134, *et seq.*, and that of Commissioner Lewis at pages 139, *et seq.*

The appellant thereupon filed the present bill in the District Court of the United States for the Southern District of West Virginia, seeking to enjoin the Public Service Commission of West Virginia from preventing the putting into effect of the rates filed by it, and to enjoin said Commission, as well as the law officers of the State of West Virginia, from enforcing the penalties provided by statute for the collection of the proposed rates. A special statutory court under Judicial Code, Section 266, was convened (R., 191), and after a complete and full hearing the case was submitted to it for decision May 18, 1925, upon the motion for a temporary injunction. The evidence consisted of the record before the Public Service Commission of West Virginia upon the said hearing before it which, by agreement of counsel and with the consent of the Court, was introduced with the same effect as though the witnesses had so testified upon the hearing before the latter, and of other evidence introduced in open Court. The latter, in the case of each witness, immediately follows in the printed record his testimony before the Commission. On May 10, 1926, nearly a year later, an opinion was handed down, written by Circuit Judge Rose and concurred in by District Judge McClintic, denying the temporary injunction. District Judge McDowell dissented from the majority but filed no opinion (Rec., pp. 1229, *et seq.*). The order appealed from followed.

Statement of Facts.

At the outset, it is well to call the attention of the Court to the fact that in this case, notwithstanding the mass of evidence taken on both sides, there is little or no dispute as to any matter of fact, the matters in controversy simply involv-

ing differences as to economic or legal theory. When a conclusion is reached as to which theory is the correct one, the case is necessarily decided. These may be left for statement as well as discussion under the appropriate points. In order to aid the Court in considering these opinions and theories, however, a brief description of the nature of the business in which the appellant is engaged seems in order.

Prior to the year 1909, indications had developed that parts of Southern West Virginia contained natural gas in paying quantities. This resulted in the acquisition of a large acreage in that territory by the Hope Natural Gas Company, which was then a large producer of natural gas in northern West Virginia, and also by United Fuel Gas Company, the predecessor of the appellant, and by the United States Natural Gas Company. In 1909, in order properly to develop said territory, the present United Fuel Gas Company acquired all of the leases and other property of the Hope Natural Gas Company in southern West Virginia, and all of the leases and other property of its predecessor, United Fuel Gas Company, and of United States Natural Gas Company. The gas leases and rights held by these companies were acquired at an agreed valuation of $6,732,920 (R., 561). The property thus acquired consisted of a small plant supplying gas to the City of Charleston, West Virginia, and some nearby communities, and the large gas acreage held by the above named predecessor companies, mostly under leases. These leases had been secured upon terms which were reasonably uniform, granting to the lessee the right to explore for and extract the oil and gas from the land.

Certain cash considerations were paid for the leases, the amounts being relatively small in the early days of the territory, and certain annual payments were agreed to be made to the land owner until oil or gas should be produced. After such production, by the terms of said leases, the land owner receives a proportion of the oil, the practically uniform pro-

vision being one-eighth thereof, and a certain annual rental, in most cases $300. per year, for each producing gas well. As a result of its purchase, appellant acquired in 1909 practically a million acres of this territory held under such leases.

Specimens of all of the forms of leases in ordinary use by the appellant are found at pages 1031-58 of the Record, and a statement showing the acreage operated and that as yet unoperated held under each such form of lease appears at pages 1014-30.

The development of the property on a much larger scale was then proceeded with, and it was discovered that natural gas was present in great quantities. Large sums of money were in consequence provided by the appellant and by its associated companies for the purpose of producing this natural gas and getting it to the market. In the organization, perfected in 1909, the Hope Natural Gas Company, which, as before stated, was a large producer of natural gas in West Virginia, became the owner of 51% of the stock of the appellant, and the Ohio Fuel Supply Company the owner of the other 49%. These companies provided the means for laying pipe lines from the gas fields to the markets in Pittsburgh, Columbus and other Pennsylvania and Ohio cities. In 1916 the Hope Natural Gas Company disposed of its holding in the appellant to the Columbia Gas & Electric Company. Prior to this time, however, that Company or one of its associates had constructed a pipe line from Cincinnati to the gas fields, and had been buying a large amount of gas from the appellant for the purpose of supplying the market at Cincinnati. The production of natural gas by the appellant increased very substantially from 1909 until it reached its peak in the year 1917, since which time the production has somewhat declined (R., 503). The ultimate exhaustion of the field is certain. In addition to producing natural gas in large quantities, appellant has also purchased very considerable quantities of gas from other producers in its field (R., 503).

In the beginning of production, the natural pressure of the gas in the well, commonly known as rock pressure, is sufficient to convey the gas through pipe lines for considerable distances. As the gas is extracted, however, from a particular pool, this pressure grows less and the distance to which gas can be transported by such pressure alone decreases. This makes necessary the construction of pumping or compressing stations, which pick the gas up when the pressure from the wells has become practically exhausted and force it again into the lines under very high pressure. This process is repeated as often as may be necessary to get the gas to the desired point under a pressure at which it can be distributed to the consumers. As will be observed from the recapitulation of the inventory of the Company's property filed as Uebelacker Exhibit No. 1 (R., 493, *et seq.*) there is a very large investment in pipe lines and compressor stations and other appliances used for the purpose of conveying the gas from the place of production to the place of consumption, referred to throughout the Record as the "transmission system". In fact, practically half of the plant used to produce the gas, convey it to the markets and distribute it to the consumers consists of these transmission lines, compressor stations and other appliances used purely for transportation purposes, while nearly an equal amount is invested in wells which have been drilled for the purpose of producing the gas from the sands in which the gas is contained (R., 537). Only a comparatively small part of the investment is in distribution plants in the various cities where the appellant furnishes gas to consumers (R., 538).

The customers of the appellant are divided into two classes, namely, (1) those to whom it sells gas delivered at the state line for transportation to other states at prices fixed by contract, including its two corporate stockholders; and (2) consumers for domestic and industrial purposes in West Virginia, to whom it sells at schedule rates, fixed by the Public Service Commission. Out of this grows the distinction to

which the Court below refers between its "regulated" and "unregulated" business. It also derives some revenue from the sale of the right to extract from the gas produced by it the gasoline carried in suspension.

Its markets are found in West Virginia, and in Kentucky through its subsidiary corporation Warfield Natural Gas Company (see *United Fuel Gas Company* vs. *Railroad Commission of Kentucky*, No. 19, submitted herewith); and because of these facts it becomes necessary, in determining the adequacy of its rates, first, to find the value of its entire property and then to allocate this value, as also its expenses and revenues, among the various services. The percentages to be utilized in making this allocation are not seriously in controversy (*post*, p. 52). When the basic facts are ascertained, the computation presents no difficulty.

The correct decision of this case involves, of course, several questions:

First: What is the value of appellant's property used and useful in the public service?

Second: To what rate of return is the appellant entitled upon this investment?

Third: To what amounts is it entitled for the purpose of compensating it for the gas distributed, for the purpose of depreciation in order that the plant may be kept in good condition, and what amount is it entitled to earn each year for the purpose of paying for the plant when the gas fields are exhausted and the property is no longer of value, generally referred to throughout the Record as amortization?

Fourth: What are the present earnings of the appellant from its public service business, and are they sufficient to provide funds for the above purposes?

Assignments of Error.

The District Court erred in denying the injunctive relief prayed for by the appellant. In so holding, it necessarily held:

(1) That appellant had not shown that the existing rates are confiscatory;

(2) That it had not shown that its property was confiscated by the order of the Public Service Commission of West Virginia complained of.

In so holding, it erred in the following respects:

(a) In holding that the value of the appellant's gas properties and rights properly to be included in the rate base did not exceed $10,317,311.39. The undisputed evidence established a far higher value.

(b) In holding that of appellant's gas properties and rights, only those classified as "proven" were used or useful in the public service.

(c) In holding, contrary to the undisputed evidence, that the value of appellant's tangible or physical property, including going concern value and working capital, was not more than $29,990,000.

(d) In failing to add to the value of said tangible or physical property as valued by it the sum of $2,044,778.24, being the cost of new investment in physical property, added and actually put in use in the public service during the year 1924, according to the undisputed evidence.

(e) In holding, contrary to the undisputed evidence, that 3.65% per year of the value of appellant's property was a proper allowance for amortization.

(f) In holding, contrary to the undisputed evidence, that the value of appellant's property devoted to the public service in West Virginia was not more than $11,251,499.

(g) In adding to the earnings of the appellant, as reflected by its books, the sum of $1,495,496.69 as additional compensation which it was held should have been charged to certain customers of the appellant for gas sold them in excess of the price actually charged and received.

(h) In charging appellant's earnings for 1923 with the sum of $934,393.41, as presumptive profit on the extraction of gasoline from the natural gas marketed by appellant, instead of the true amount earned by appellant from such gasoline extraction as reflected by its books.

The result of which errors and of each of them is to deprive appellant of its property without just compensation therefor, in violation of the 14th Amendment to the Constitution of the United States.

ARGUMENT.

Summary.

I. The value of appellant's property used and useful in the public service:

(1) The District Court erred in holding that the value of the appellant's gas properties and rights properly to be included in the rate base did not exceed $10,317,311.39. The undisputed evidence established a far higher value.

(a) *Appellant's evidence of value was adequate and complete.*

(b) *There was an entire absence of any contradictory testimony.*

(c) *Not cost, but present fair value, is the basis of return.*

(d) *The evidence before the Court met the previous criticisms by the Supreme Court of Appeals of West Virginia and of Public Service Commissioner Stathers.*

(e) *Neither the Commission nor the Court can disregard the uncontradicted testimony introduced by appellant.*

(2) The District Court erred in holding that of appellant's gas rights, only those classified as "proven" were used or useful in the public service.

(3) The District Court erred in holding, contrary to the undisputed evidence, that the value of appellant's tangible or physical property, including going concern value and working capital, was not more than $29,990,000.

(a) *Fair value of the inventory.*

(b) *Allowance for overheads.*

(c) *Allowance for depreciation.*

(d) *Going concern value.*

(4) The District Court erred in not including in the value of appellant's tangible or physical property the sum of $2,044,778.24, being new investment in physical property added and actually put in use in the public service during the year 1924, according to the undisputed evidence.

II. The said District Court erred in holding, contrary to the undisputed evidence, that the value of appellant's property *devoted to the public service in West Virginia* was not more than $11,251,499.

III. The said District Court erred in holding, contrary to the undisputed evidence, that 3.65% per year of the value of appellant's property was a proper allowance for amortization.

IV. It was error to add to the earnings of the appellant, as reflected by its books, the sum of $1,495,496.69 as additional compensation, which it was held should have been charged to certain customers of the appellant for gas sold them in excess of the price actually charged and received.

V. The said District Court erred in charging appellant's earnings with the sum of $934,393.41, as presumptive profit on the extraction of gasoline from the natural gas marketed by appellant, instead of the true amount earned by appellant from such gasoline extraction, as reflected by its books.

VI. The rates complained of in the bill are insufficient to produce a fair return on the value of appellant's property, and are therefore confiscatory.

VII. The order or judgment of the District Court should be reversed and this cause remanded with appropriate directions.

ARGUMENT.

I.

The value of appellant's property used and useful in the public service.

Both in point of legal principle and in mathematical weight, the most important questions presented by the Record are those of value. To segregate them it is necessary to call to mind the fact that appellant's property may be divided into two general classes—the first consisting of the gas territory owned and held by the appellant, and the second of the plant used for producing, transmitting and delivering natural gas to the appellant's consumers, sometimes termed herein its "physical" or "tangible" property.

The first class consists of more than 800,000 acres of land in which the appellant either owns the gas rights in fee, or holds the same under leases, giving it the exclusive right to produce the gas therefrom.

The second class consists of a large number of producing gas wells, extensive pipe line systems, compressing stations, distributing pipe lines, meters and a large number of other appliances and accessories used in connection with the business.

The Various Contentions as to Value.

The appellant maintains that the evidence shows that at a conservative estimate the value of its property, which should properly enter into any rate base, is as follows:

Physical property (production, transmission and distribution systems, etc.)	$22,274,274.00
Gas lands, leaseholds and rights	36,449,176.00
General overhead charges	6,357,046.00
New property added during 1924	2,014,778.00
Working capital	999,000.00
Going concern value (difference between reproduction cost new and same less deterioration)	8,423,105.00
Total	$76,538,379.00

Commissioner Stathers reached the following figures:

Physical property, Dec. 31, 1923 (R., 95)	$25,000,000.00
New property added, in service Nov. 30, 1924 (R., 95 6)	648,457.72
Gas leaseholds (R., 118)	6,361,511.42*
Working capital (R., 118)	990,000.00
Going value (R., 119)	3,000,000.00
Total (R., 119)	$35,999,969.14

Commissioner Divine, the following (R., 135):

Physical property, Dec. 31, 1923	26,000,000.00
Leaseholds, Dec. 31, 1923	10,500,000.00
Going concern value	3,000,000.00
Working capital	999,000.00
Additions to property in 1924	666,000.00
	$41,165,000.00

While the Court below held that the items in the rate base could not exceed:

*Note—Book cost $6,732,920 (R., 426, 561, 1166), which is the figure used by appellees' witness Hagenah in his valuation (R., 1166).

Physical property (R., 1247, 1266)	$26,000,000.00
Going concern value (R., *id.*)	3,000,000.00
Working capital (R., *id.*)	990,000.00
Gas reserves, used and useful in the public service (R., 1264, 1266)	10,317,311.39
	$40,307,311.39

It is apparent that the principal controversy arises in connection with the valuation of appellant's gas leaseholds and gas rights. It may properly be first discussed.

1. The District Court erred in holding that the value of the appellant's gas properties and rights properly to be included in the rate base did not exceed $10,317,311.39. The undisputed evidence established a far higher value.

As stated, the appellant owns the gas rights in more than 800,000 acres of land, situated in southern West Virginia and eastern Kentucky. Practically all these rights were acquired prior to 1909 before there was any substantial development in the southern West Virginia field for natural gas. From time to time since then additional acreage has been acquired, but it has been of little consequence as compared with the total acreage. This item of property was originally entered on the company's books at the amount paid therefor at the time of the company's organization in 1909, and before there was sufficient development fully to indicate its real value to wit, at the sum of $6,732,920; and this, the appellees contend, is the maximum amount which should be allowed as its value for rate-making purposes.

Commissioner Stathers has found in his opinion that there is no other competent evidence of value of this property. Commissioner Divine finds that there is no other evidence

whatever of weight as to the value of this property, but he thinks it should be appreciated to the extent that the Department of Commerce in its general index figures shows other property to have been appreciated in value, and thus he estimates the value of this property at $10,500,000.

No contention is made by anyone that this is all that it is worth or anything like its present value. Indeed the District Court says (R., 1262):

> "Doubtless as a whole, the rights are worth a good deal more than the plaintiff paid for them and they may approximate three times as much as the most they ever cost. For reasons to be presently stated we do not think we are called upon to make a definite finding on that question."

These reasons, when stated by the court, are that in its opinion, in which it differs with the Public Service Commission, only a fractional part of the appellant's gas rights are to be considered as used or useful in the Public Service, and for this fraction the valuation fixed by the appellant's witnesses may be adopted without disturbing its ultimate conclusion. Before discussing this phase of the matter it may be well to review the testimony.

a. *Appellant's evidence of value was adequate and complete.*

The appellant insists that the evidence establishes a present fair value for its gas properties of not less than $26,000,000 in round numbers.

For the purpose of proving the value of its gas properties appellant introduced the following witnesses:

Ralph E. Davis, a geologist and mining engineer of long and wide experience, whose qualifications appear at pages 229 *et seq.* of the Record, and who made a careful study of all this property. Mr. Davis had previously been employed by the appellant for the purpose of making a study of its

gas properties for the purpose of calculating depletion under the Federal Income Tax Laws. His evidence consists of his report, Vol. II of the Record, and of oral testimony which begins at page 229.

From this evidence it appears that he made a thorough study of all geological data available for the territory in which the lands lie. He studied the records of all gas wells drilled in that territory, both by appellant and by other gas producers. He ascertained the original production of each well, the initial rock pressure thereof, the amount of gas produced from each well from the beginning of production until the date of his report, and the same data as to each field or pool. He observed the decrease of rock pressure in each well and in each pool as the gas was taken therefrom. He noted the geological location of each well, studied the territory adjacent thereto and from these observations determined the number of acres of land proven to be productive of natural gas within each of the various pools which had been tested. Certain of appellant's acreage amounting to a total of 136,384 acres, he classified as "proven"; that is, territory which had been actually proved by the successful driving of wells to be underlaid with natural gas. Other portions of the territory, totalling 126,208 acres, he classified as "probable"; that is, located within what he found to be the same pools as those underlying the "proven" acreage but within the limits of which no wells had as yet actually been drilled. In view of the fact that this "probable" territory had not been actually demonstrated to be productive of gas he deducted from its estimated content certain percentages varying as to different pools or tracts of land, but averaging as to all of them 38% (R., 261).

The balance of Appellant's acreage, a total of 552,318.68 acres, this witness classifies as "possible" or "unfavorable" (R., 239-240) for the reason that at the date of his examination and report drilling had not so far progressed therein as to permit of any reasonable estimate as to the quantity

of natural gas which it contained. In his estimate, presently to be mentioned, of the amount of gas underlying plaintiff's acreage he therefore entirely excluded this territory (R., 242).

Having thus determined the number of "proven" and "probable" acres, he next proceeded to determine the quantity of gas in the various pools. This he did by comparing the initial rock pressures and the rock pressures at the time of his examination by dividing the total number of cubic feet of gas produced from each pool by the decrease in rock pressure in pounds and ascertained the number of thousands of cubic feet of gas produced from the pool for each pound of decrease of rock pressure. Then, by multiplying this factor by the initial rock pressure, he determined the quantity of gas in the pool originally, and by multiplying it by the rock pressure at the time he made his observation he determined the amount of gas still remaining therein. The method pursued by him in reaching these conclusions and the reasons therefor are fully set forth in his report and testimony above cited.

To test the accuracy of his calculations he applied the same method to the past history of the various pools and wells (R., 734). He found that by taking the decrease in rock pressure from the beginning up to 1913 and applying it to the number of cubic feet, which should, according to his calculations, have been produced for each pound of rock pressure, he had a result which differed only about 6% from the amount of gas actually produced by the company during that period from those pools and wells, the actual production being in excess of the calculated production to that extent. This demonstrates both the reliability of his methods and the conservatism of his estimate.

This witness was cross examined on December 29, 1924, about seven months after he had testified, and a year after he had made his classifications and estimates above referred to. In the intervening time a number of wells had been

drilled, and the witness instances on redirect examination (R., 272) one case in which ten wells were drilled in the Clendenin pool, eight in the territory which he had classified as "probable" and two in territory classified by him as "unfavorable". Of these ten wells three were oil producing wells and seven gas producing wells, the two in the "unfavorable" territory being gas producing wells.

It appears from Mr. Davis's testimony and report that the method so adopted by him for calculating the content of natural gas pools is one which is now generally approved, and is the one used by the engineers of the United States Government in determining depletion for income tax purposes. Large gas interests are guided to a material extent thereby, and it has been applied for a sufficient length of time to actual conditions to demonstrate its practical value (R., 241).

As a result of his study and calculations the witness estimates that in the "proven" territory of 136,384 acres there remained as of the date to which his report refers 249,100,000,000 cubic feet of natural gas unextracted, and in the "probable" territory of 126,208 acres 414,600,000,000 cubic feet, a total of 663,700,000,000 cubic feet (R., 737).

This witness (Ralph E. Davis) further testified that he made a comparison of the value of natural gas and coal in the manufacture of steel and found that at the date of his testimony natural gas was worth at least 35 cents per thousand cubic feet, when in competition with a good grade of soft coal (R., 244).

He supplemented this study by actual inquiry among many large consumers of natural gas, including steel companies at Pittsburgh, and found that the price they were paying was in the neighborhood of 35 cents per thousand cubic feet, one steel company using several million feet a day at that price (R., 244-5).

Finding this market adequate to absorb the product of the United Fuel Gas Company, he then calculated the cost of

getting the gas to this market, providing for the construction of pipe lines, and found that it would require, including therein the value of property and land already owned by the company, a plant of the value of $52,181,538 (R., 246). He then found that the gas would pay for this plant, a fair return upon the investment, including taxes and all other expenses, and leave $34,659,936.18 as the value of the gas. (See his Exhibit "Z", R., 959, and table, R., 980.) Examination of this report and Exhibit "Z" shows that he has included every item of expense and has applied the proper discount factor in arriving at his conclusion.

Said the court below (R., 1255):

> "His testimony stands uncontradicted."

Charles F. Uebelacker, of the firm of Ford, Bacon & Davis above referred to, who has investigated and reported on some thirty-six natural gas companies, and whose other exceptional qualifications appear at pages 195, *et seq.* of the record, assumed as correct the quantity of gas found by Mr. Davis to be available as aforesaid. He then took several representative contracts under which gas was being sold in the field, in no wise affected by public regulation, and assumed that the company's gas would be worth as much as the gas sold under these contracts, less what it cost the company to produce it with its own wells. He made a very careful calculation of the cost of producing gas by the company's own wells, and found that it cost 5.431 cents per thousand cubic feet. The method used by him is fully discussed in his report (R., 520-525). He states the governing principles as follows (R., 521):

> "The measure of the value to the owner or lessee of gas in the ground is the difference between the prevailing market price at which such owner or lessee can purchase gas delivered to the field mains and the cost to such owner or lessee of producing and maintaining with his own wells an equivalent supply of gas at the same point of delivery.

"In applying this principle it is necessary to arrive at:

(a) The total cost to the owner or lessee of producing and maintaining with his own wells and equipment an equivalent supply of gas corresponding in delivery conditions to those under which the gas is purchased. This total cost must include operating expenses and depreciation, amortization of the value of the equipment used and a fair return upon the investment in such equipment.

(b) The prevailing market price at which gas can be purchased as controlled by delivery conditions.

(c) The estimated recoverable content of the proven and probably productive acreage."

Applying these factors to the total amount of gas which Mr. Davis found to be in the "proven" and "probable" acreage produced a value of this gas of $43,155,421.55 (R. 535). The remaining acreage, to wit, 552,319, in respect of which Mr. Davis made no estimate as to the quantity of gas in the ground, Mr. Uebelacker valued at the average price for acquiring acreage in the year 1923, $5.9655 per acre, giving to this acreage a value of $3,293,754, or a total valuation for gas land, leaseholds and natural gas rights of $36,449,176, which is the first item carried into his table at page 537 of the record. The contracts which Mr. Uebelacker took as typical were, as appears from his report just referred to, entirely independent contracts for the sale and purchase of large quantities of natural gas made by parties dealing at arm's length and without the intervention of any public regulating authority.

James J. Calot, who testified (R. 319) that he was the manager of a gas company which produced considerable quantities of gas; that he had an offer from a purchaser whom he named to purchase the gas produced by his company at 14 cents per thousand cubic feet at the mouth of the well after the gasoline had been extracted therefrom, which offer he had declined as too low.

Ira G. Sayre, another independent producer, who testified (R., 321) that he was selling the gas produced by him to Owens Bottle Company, after extracting the gasoline, at 10 cents per thousand cubic feet, and that he had made other sales at from 12 to 15 cents per thousand cubic feet; that the contract with the Owens Bottle Company was made about three years before the date of his testimony; that the price of gas had not decreased since, and that he did not expect to renew said contract at that price when it expired.

Ben C. Grosscup, who testified (R., 323) that he was vice-president and general manager of the Charleston-Dunbar Natural Gas Company; that he purchased large quantities of gas for his company, and that the price paid by him for such gas in the two years last past varied from 9 to 12 and 14 cents at the mouth of the well.

J. C. Blair, who testified (R., 360) that a company with which he was associated was then selling all its gas under a contract with International Nickel Company delivered at Huntington, West Virginia, at the end of an 8 inch pipe line, costing about 2.8 cents to deliver; that the price under this contract at the date of his testimony was 20 cents per thousand cubic feet, rising to 23 cents in two years and to 25 cents two years thereafter; that under this contract his company had the right to extract the gasoline before delivering the gas; that he had bought gas in the field on a six-year contract at 12 cents a thousand feet for the first three years and 15 cents for the remaining three years.

H. A. Wallace, vice-president and general manager of the appellant, who testified (R., 349) that during the last year before the date of his testimony he had made contracts to purchase gas from small producers in the field, that under the last contracts which he then recalled he paid 15 cents a thousand feet for the gas at the wells, besides agreeing to spend approximately $120,000 in laying pipe lines and giving to the other party with whom he contracted what he considered practically 1000 acres of proven gas or oil territory.

Further (R., 355) that he was advised of contracts which the Hope Natural Gas Company was then making in the field for the purchase of gas at 18 cents per thousand cubic feet, the quantity involved being possibly two or three million feet daily.

T. O. Sullivan, vice-president and general manager of the Hope Natural Gas Company, who testified (R., 2834) that his company purchased gas from other producers in the West Virginia field at the well and paid from 10½ to possibly 14 or 16 cents per thousand feet therefor, the price varying according to the place of delivery.

The testimony of these actual operators and dealers in natural gas corroborates Mr. Uebelacker. As stated, these contracts were all between parties dealing at arm's length, independently of any public regulating body, and indicate in the strongest manner that Mr. Uebelacker's calculation of the value of the gas in the ground is most conservative.

Appellant also produced another class of witnesses, consisting of a number of men prominent in the natural gas business, of long experience therein, associated with companies doing a very large business and having in addition peculiar knowledge of the gas fields in which appellant's acreage is located, all of whom had made independent valuations thereof. These witnesses are as follows:

T. O. Sullivan, at the date of his testimony, vice-president and general manager of the Hope Natural Gas Company (R., 279, *et seq.*). In addition to his testimony cited above, and after demonstrating his profound knowledge of the subject matter through his connection with large producing natural gas companies in West Virginia and western Pennsylvania since 1886, he proceeded to show his familiarity with appellant's gas acreage and its records of production (R., 281). He expressed the opinion, based on his personal knowledge, experience and examination, that the value of appellant's gas reserves was in round figures $34,000,000; that he considered

that a prudent purchaser ought to be willing to pay a willing seller that sum therefor; that in his judgment, based on his practical experience, appellant's operations upon said territory had "been very wisely conducted in order to develop the property to the greatest extent with the fewest number of wells"; that he had been operating similar properties under substantially the same conditions for twenty years; that appellant's acreage is a peculiarly valuable property because of the fact that it is well joined up, resulting in the production of gas at a minimum cost because of non-necessity for drilling offset wells and the absence of interference through operations on adjoining tracts; that in arriving at his valuation of appellant's gas acreage he had in mind the sale of the gas in a free market where the price would not be affected by the rates prescribed by public authorities, such markets existing in Pennsylvania and Ohio; that in fixing his valuation he did not consider any value which the gas might have had for the extraction of gasoline, and that if the gas has any additional value for that purpose, his valuation would be increased to that extent. That he was familiar in a general way with appellant's plant, and that, assuming it to be worth $25,000,000, in his judgment *a company would not be justified in making the investment that has been made in that plant without a large reserve gas acreage, that the reserve acreage which the company has is not any too much and is not large enough if other desirable acreage can be secured.*

John B. Corrin, vice-president of the Hope Natural Gas Company, who qualified (R., 284) by detailing his experience for twenty-two years in the natural gas business, his previous experience in the oil business and his connection with companies whose operations are comparable in size with those of appellant, and who showed his peculiar knowledge of the properties of appellant by reason of the fact that a large part of them had formerly been held by the Hope Natural Gas Company and sold by it to appellant. In his opinion, based upon his study of all

the elements that should enter into a judgment as to the value of such property, access to all of the company's records, knowledge of the number of its wells, the amount of gas produced, the initial rock pressures of the wells, present rock pressures, and all other material data, the value of appellant's gas properties in West Virginia alone (R., 287-8) was at least $35,000,000. He based his valuation in part upon what he considered the unquestionable fact that appellant's entire output could be sold for industrial purposes in Ohio and Pennsylvania free from any control by any public authority. He further testified as to his acquaintance with appellant's physical plant and stated as his judgment that, upon the assumption that such plant cost $25,000,000, *its construction would not be justified unless there was behind it at least as much reserve acreage as appellant has or more* (R., 289).

An affidavit by this same witness (Corrin), filed upon the hearing before the court (R., 290), brings out the fact that his valuation of appellant's gas properties as above was based upon full knowledge that most of them were leaseholds and that he had before him full details respecting the leases. It is thought that this, supplemented by appellant's other evidence on the subject referred to at page 35 hereof, fully meets the criticism of Commissioner Stathers (R., 112) that none of appellant's witnesses showed any familiarity with any of the leases or testified in relation thereto.

T. B. Gregory, president and director of a number of natural gas and oil companies, after (R., 292, *et seq.*) demonstrating his thorough familiarity with the natural gas business resulting from forty years' experience, his familiarity with appellant's properties and his study thereof, both in the service of his own companies and as director in charge of gas for the United States Fuel Administration during the recent war, placed a valuation upon appellant's West Virginia property, excluding the production plant and the transmission plant, in excess of $30,000,000. He testified that he

would willingly give $5,000 for a sixty day option at that figure on the West Virginia reserve gas property alone without taking into consideration the value of any gasoline which it might yield and expressed certainty of his ability to finance the handling of the property at that price (R., 295). In examination of this witness before the court it was clearly brought out (R., 296-7) that he was thoroughly familiar with the nature of appellant's rights and interests in its so-called gas reserves and formed his opinion as to their value accordingly. Like the witnesses Sullivan and Corrin, he was strongly of the opinion that the erection of appellant's production and distribution plant would not be justified unless there was behind it as much or more acreage as that of appellant and that the latter would be very lax if it did not acquire additional acreage if possible (R., 296).

On cross examination it was brought out that the valuation of this witness was based in part upon the fact that natural gas could be sold in Pittsburgh as well as in Columbus at 55 cents or more per thousand cubic feet.

A. G. Wamock (R., 303) and John Davidson (R., 306), both experienced operators and large producers of natural gas in the field in which appellant's acreage is situated, placed valuations upon appellant's gas acreage of $45,000,000 and $31,200,000 (R., 318) respectively.

S. W. Meals, president of the Carnegie Natural Gas Company, who testified (R., 304-6), after showing his familiarity with the subject, that manufacturing industries in Pittsburgh were paying at that time 45 cents per thousand cubic feet for natural gas.

It is suggested in the opinion of the court below (R., 1261) that these witnesses of the last class are interested in the natural gas business and are for that reason disposed to place excessive values on natural gas properties. The Court admits that "they are all highly competent men", but proceeds: "Perhaps it would not be unnatural to suspect that they are inclined to think well of properties similar to that

of which they are part owners." Why should they not be? They have been exercising their judgment as to such properties for many years, and their companies are all highly successful.

This method of proving the value of such gas properties as appellant's had the express approval of the Court in *Pennsylvania Gas Co.* vs. *Public Service Commission*, 211 App. Div. (N. Y.) 253, 262 3.

It is submitted that there is no basis for the Court's criticism of these witnesses, and no attack was made upon their testimony by the appellees upon this ground. The only objection to their testimony which the record contains is that the witnesses, Sullivan and Corrin, did not show themselves competent to express an opinion as to the value of appellant's gas rights (R., 284, 287, 290). This objection is, of course, without merit, and was so considered by the Court, as appears from its language just quoted. It is obvious that a reliable opinion as to the money value of such property as appellant's gas holdings is scarcely to be had except from those interested in and experienced in the same business. These witnesses were all men of the highest standing and none of them had any connection with the appellant. If such men as Messrs. Sullivan, Corrin and Gregory are not qualified to express an authoritative opinion upon the value of such properties as that under discussion, there is no competent witness upon the subject. Coming back to the question of their suggested bias, it is submitted that such men are no more likely to be biased than engineers and accountants whose principal business is testifying for municipalities and public service Commissions.

We have here testimony which would be perfectly competent to prove the value of this property if it was sought to condemn it for any public purpose or to prove its value for any other purpose for which it might be necessary to determine the same, but it is urged that some other or different character of proof must be offered when we come

to show the value for rate-making purposes. The nature of such different or additional proof is, however, not suggested. Value for purposes of rate making is no other or different from value for purposes of purchase or condemnation in the exercise of the power of eminent domain. Evidence which is competent and adequate in the one case is equally so in the other, and it is not true that a rate case requires some other character or quantity of proof peculiar to itself.

> *City of Erie* vs. *Public Service Commission of Pennsylvania*, 278 Penn. 512, 123 Atl. 471, 477.

But the testimony of these witnesses finds its strongest support in the fact that no attempt whatever was made by the appellees to controvert it.

> *Ibid., loc. cit.;*
> *Pennsylvania Gas Company* vs. *Public Service Commission*, 211 App. Div. (N. Y.) 253, 262 3;
> *People* ex rel. *Peoples Gas & Electric Co.* vs. *Public Service Commission*, 214 App. Div. (N. Y.) 108, 112 3.

This aspect of the case we proceed to discuss.

b. ***There was an entire absence of any contradictory testimony.***

To meet appellant's evidence as to the value of its gas rights and properties, appellees introduced *nothing* except the evidence of the amount paid by the company for the acreage in the beginning, and a statement made up by an expert accountant as to the average cost of renewing leases. This evidence of the cost of renewal is of no particular force, as appears from the testimony of Dillon C. Jay (R., 372), for the reason that appellant has the right to perpetuate its leases by drilling wells on the leased property, and when it applies for a renewal a year or eighteen months before the expiration of the term, the landowner knows that unless he

renews a well will be drilled and the lease perpetuated. For this reason renewals are secured upon very reasonable terms.

It is apparent that the evidence of the value of this property which the majority of the Public Service Commission considered as the only competent evidence thereof is its cost long before the rise in prices (R., 117-136), and at a time when development had not proven the value of the property for natural gas production. This evidence, as this court has so recently said in *McCardle* vs. *Indianapolis Water Co.*, 272 U. S. 400, 410, is of little weight in determining the question of value. The court in that case said that the cost of the plant or the cost of property acquired prior to the great rise in prices due to the war does not constitute any real indication of the value of the property at the present time.

We submit that, instead of taking the most reliable evidence as to value, the Commission attributed exclusive weight to the least reliable evidence thereof. Upon this theory that the cost of the gas rights was the proper evidence of value, Commissioner Stathers fixed a value of $6,361,511.42 therefor. No contention is made by any of the experts for the appellees or the Commission that this is anything like the present value of the property. Appellant has supported the valuation which it claims for its gas properties in three ways: (1) by the testimony of an expert geologist and engineer thoroughly conversant with the latest developments and the practical working of the theory upon which he relies, (2) by evidence as to the actual price paid for natural gas under contracts between parties wholly independent of each other and contracting independently of public regulation, and (3) by the opinions of men of the highest standing in the natural gas business, men of great experience, and, moreover, well acquainted with the particular property in respect of which their opinions are expressed. The record shows that after these witnesses testified the court gave the protestants several months to get additional evidence, but not a single witness was produced at the end of that period to controvert the appellant's witnesses or to suggest that their judgment was not entitled to absolute credit and the utmost weight. If

the protestants had been able to find any witnesses whose testimony could have tended to impeach that of appellant's, it is inconceivable that such witnesses would not have been produced.

c. *Not cost, but present fair value, is the basis of return.*

In arriving at a rate base, the matter to be determined is not the original cost of the property constituting it, or what the present owner paid for it (if it was bought as a going concern), but what it is worth as a going concern at the time the inquiry is being made. This Court has so often and so clearly asserted this proposition that it would seem a work of supererogation to discuss it here but for the fact that the Public Service Commission and Court below have departed so far in this case from the proper criterion. We therefore call attention to a few of the decisions.

In *Minnesota Rate Cases*, 230 U. S. 352, the Court at page 454, very clearly declares this principle:

> "It is clear that in ascertaining the present value, we are not limited to the consideration of the amount of the actual investment. If that has been reckless or improvident, losses may be sustained which the community does not underwrite. As the company may not be protected in its actual investment, if the value of its property be plainly less, so the making of a just return for the use of the property involves the recognition of its fair value if it be more than its cost. *The property is held in private ownership and it is that property, and not the original cost of it, of which the owner may not be deprived without due process of law.*" (Italics appellant's.)

In *Board of Commissioners* vs. *New York Telephone Company*, 271 U. S., 23, this court, at page 31, said:

> "The just compensation safeguarded to the utility by the Fourteenth Amendment is a reasonable return on the value of the property used at the time that it is being used for the public service, and rates not sufficient to yield that return are confiscatory."

Similar language was used by the Court in *Bluefield Water Works & Improvement Company* vs. *Public Service Commission of West Virginia*, 262 U. S., 679, at page 690. In that case the Court also quoted from the opinion in *Willcox* vs. *Consolidated Gas Company*, 212 U. S., 19, 52, the following:

> "And we concur with the Court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property which legally enters into the consideration of the question of rates has increased in value since it was acquired, the Company is entitled to the benefit of such increase."

In *Ohio Utilities Company* vs. *Public Utilities Commission of Ohio*, 267 U. S., 359, at page 363, the Court comments upon the curtailment of the estimated value of buildings by the small sum of $266.17, and says that such curtailment "finds no explanation in the record, and probably was a sacrifice to the easy convenience of round numbers". This comment might be applied with peculiar propriety to the conclusions reached by the majority of the Public Service Commission and by the Court in this case, for most of their values are found in even millions, a result hardly to be expected if all of the evidence had been considered in ascertaining such values.

This doctrine of present fair value as the thing to be sought is reiterated by this Court in the very recent case of *McCardle* vs. *Indianapolis Water Company*, 272 U. S., 400, in which the Court discusses to some extent the weight to be given of cost of construction. It says (p. 410):

> "It is well established that values of utility properties fluctuate, and that owners must bear the decline and are entitled to the increase. The decision of this Court in *Smyth* vs. *Ames*, 169 U. S. 466, 547, declares that to ascertain value 'the present as compared with the original cost of construction' are, among other things, matters of consideration. But this does not

mean that the original cost or present cost or some figure arbitrarily chosen between these two is to be taken as the measure. The weight to be given to such cost figures and other items or classes of evidence is to be determined in the light of the facts of the case in hand. By far the greater part of the company's land and plant was acquired and constructed long before the war. The present value of the land is much greater than its cost and the present cost of construction of those parts of the plant is much more than their reasonable original cost. *In fact, prices and values have so changed that the amounts paid for land in the early years of the enterprise and the cost of plant elements constructed prior to the great rise of prices due to the war do not constitute any real indication of their value at the present time.*" (Italics appellant's.)

The doctrine thus laid down by this Court was recognized by the Supreme Court of Appeals of West Virginia as binding upon it in a case involving the value for rate making purposes of these very properties, although that Court held that in that particular case the evidence of appreciation of values over investment was insufficient.

> *City of Charleston* vs. *Public Service Commission*, 95 W. Va. 91; 120 S. E. 398, 403.

But the evidence in the instant case fully meets the criticisms so made by the Supreme Court of Appeals of West Virginia upon that before it in the case cited.

(d) *The evidence before the Court met the previous criticisms by the Supreme Court of Appeals of West Virginia and of Public Service Commissioner Stathers.*

As stated, the Supreme Court of Appeals of West Virginia in *City of Charleston* vs. *Public Service Commission*, 95 W. Va. 91; 120 S. E. 398, while bowing to the authority of this Court as to the principle laid down in the decisions which we have cited, held that the evidence then before it was too spec-

ulative and uncertain to show the appreciation of value over investment (120 S. E. at p. 403). As stated above (p. 3), it was for the purpose of meeting this criticism that appellant retained Mr. Uebelacker to make the appraisal of its property and caused Mr. Davis to continue his investigations. The testimony of Mr. Davis in the instant case is therefore much more full and circumstantial than it was in the *City of Charleston* case, he having in the meantime had opportunity to make a much more thorough examination. It further appears that Mr. Davis's method of estimating the quantity of gas in the ground was more widely accepted at the date of his testimony in the instant case than it was at the date of his testimony before the Public Service Commission in the *City of Charleston* case (R., 240-2, 247, 256-7). As an instance of this, he cites the fact that in the interval between the two dates the Engineering Division of the United States Bureau of Internal Revenue has recognized his method as essentially sound and accepted the reports prepared in accordance therewith for the purpose of allowing depletion (Rec., 240). Mr. Uebelacker's testimony supporting that of Mr. Davis was also absent in the *City of Charleston* case. Nor was there introduced in that case any such testimony as was given in this by the witnesses Sullivan, Corrin, Gregory, Davidson and Wamock—men of great practical experience in the natural gas business and thoroughly competent judges of the market values of natural gas properties.

Chairman Stathers admits (R., 114-5) that appellant's gas leaseholds have a value which, including appreciation since their acquisition, must, if shown, be included in the rate base. In declaring that the leaseholds have value he is in entire accord with the decisions of this Court, which has made similar rulings as to leases conferring the right to remove and reduce ore deposits, and as to water rights.

Lynch vs. *Alworth-Stephens Co.*, 267 U. S. 364, 369;

San Joaquin County vs. *Stanislaus County*, 233 U. S. 454, 459;
McCardle vs. *Indianapolis Water Co.*, 272 U. S. 400, 413.

He takes the ground, however (R., 99) that Mr. Uebelacker has not endeavored through investigation of values in the neighborhood in which these leaseholds are located, to make any estimate of their market value and that no other witnesses of appellant have given this acreage any valuation. Mr. Stathers evidently lost sight of the testimony of the witness Sullivan (R., 283), Corrin (R., 286), and Gregory (R., 294), from which it clearly appears that these witnesses were placing a value upon the particular leaseholds that appellant owned and upon nothing else, and that they were fully acquainted with the exact nature of appellant's interest in the property. Mr. Corrin reiterates this in the most specific manner in his affidavit introduced in the hearing before the Court (R., 291).

Mr. Stathers makes the further criticism (R., 108) that the form of lease or contract in use by the appellant was not introduced before the Commission. This omission was fully supplied by the introduction before the Court of specimens of all the forms of leases in common use by appellant (R., 1031-1058), with a tabulation of the acreage held under each such form (R., 1014-1030).

(e) *Neither the Commission nor the Court can disregard the uncontradicted testimony.*

The testimony of witnesses whose character is unimpeached and which is not shown to be mistaken or inaccurate, either on cross examination or by counter-testimony, cannot be arbitrarily discarded. There must be some basis in the Record to justify disregarding it and we submit that there is no such basis in this Record.

Ohio Utilities Co. v. *Public Utilities Commission of Ohio*, 267 U. S., 359, 362-3;

Quock Ting vs. *United States*, 140 U. S. 417, 420;

City of Erie vs. *Public Service Commission of Pa.*, 278 Penn., 512; 123 Atl., 471, 477;

Pennsylvania Gas Company vs. *Public Service Commission*, 211 App. Div. N. Y. 253, 262-3.

"A finding without evidence is beyond the power of the Commission."

Interstate Commerce Commission v. *L. & N. R. R. Co.*, 227 U. S. 88, 92-3;

Florida East Coast R'way Co. v. *U. S.*, 234 U. S. 167, 185.

2. The District Court erred in holding that of appellant's gas rights only those classified as "proven" were used or useful in the public service.

As we have stated, the Court below escaped the task of finding the fair value of appellant's gas rights by striking out on a line of its own. After discussing the evidence of value before it, it abandoned the Public Service Commission's point of view and came to the conclusion (R., 1262-4) that only so much of this gas property was used and useful in the public service as had been actually demonstrated by drilling to contain natural gas, being the 136,384 acres which Mr. Davis classifies as "proven" acreage, and upon which he fixes a value of $10,317,311.39. This value the Court adopts and argues that while the rest of the property may be valuable, it cannot be considered as being so for the public service. In this it differs also with the Supreme Court of Appeals of West Virginia which, in the case of *City of Charleston* vs. *Public Service Commission*, 95 W. Va. 91, 120 S. E. 398, had under consideration the valuation of the

same gas rights for rate-making purposes, and concluded that the appellant was entitled to earn a fair return upon the present fair value of all these gas reserves. This is the latest pronouncement of the highest Court of the State on this subject, and in addition relates to this particular property. It is true in that case the Court held that the evidence then before it was not sufficient to prove any value of the gas rights over their cost, but it unequivocally held that if such value was proved then it must be allowed. The opinion of the Court below in the instant case contains the first suggestion to the contrary.

Consider the state of facts to which this doctrine is to be applied. In 1909, the appellant acquired practically all of the territory which it now holds. Relying upon the yield which so large an acreage promised, it proceeded from time to time to invest (as the District Court found) a total of some $26,000,000 in development of the gas and equipment for its marketing. Its customers, both foreign and domestic, made large individual expenditures in order to receive the gas it might be expected to supply. During the year preceding this suit, it sold 47,000,000,000 feet, and now holds in its "proven" as distinguished from its "probable" or "possible" territory 249,000,000,000 feet, or but a five years' supply. But for the remaining property, that would measure its years of life. Yet, because it is only from this pool that present drafts are being made, it may earn nothing on the residue that it holds, no matter how clearly its value may be proven, nor how sure it is that it must be resorted to in the future. The "probability" of the presence of 414,600,000,000 additional feet of gas under its control would be a potent element of value if its properties and plant were exposed to sale in the open market; it would have to be paid for if it were taken by eminent domain; but it means nothing when a rate base is to be arrived at in a valuation case!

Of course it is conceivable that a natural gas company might accumulate or acquire a reserve acreage so large in

comparison with that actually in use, so utterly unrelated to any present or prospective demand, that it might be treated as idle capital so invested as to have no genuine connection with that portion of the property in public use. Under such circumstances, it might be segregated from the remainder of the property in ascertaining the rate base. *Mutatis mutandis*, the same thing might occur in the case of any other public utility. We say this is conceivable, although in the case of a natural gas company it is in the highest degree improbable, but certainly there is nothing in the present record to lend countenance to such a claim.

On this subject, Mr. Sullivan, one of the vice-presidents and general manager of the Hope Natural Gas Company, Mr. Corrin, one of the vice-presidents of that Company, and Mr. Gregory, the president of the Manufacturers Light & Heat Company, among the largest gas producing companies in the United States, have explicitly testified that appellant has no more gas reserves or gas rights than are sufficient to justify the plant; that good business judgment would not only justify but require the acquisition of any further acreage that could be acquired, and, in substance, that it would be impossible to finance the construction of such a plant as appellant's with less acreage than it has. This testimony is not controverted by the statement or the opinion of any witness in the case. Even Hagenah, protestant's expert, admits that appellant's plant could not be built on the basis of a five years' supply; that it is a good thing for the public that appellant has an eighteen year supply, and would be better if it had a twenty-five year supply (R., 465). We must assume that if any one familiar with the natural gas business held a different opinion, he would have been called and his testimony put in the Record. It follows that if appellant had been limited to the 136,000 acres of natural gas rights the plant could never have been financed, never would have been built, and protestants would never have had the gas.

In *Southern Bell Telephone Co.* vs. *Railroad Commission of South Carolina*, 5 Fed. (2nd) 77, 94 5, it was held that

additional equipment provided for future years was not idle capital in any sense of the term and must be included in the rate base. Said the Court (p. 91):

> "A business concern, and especially a telephone company, must look to the future as well as the present. It is a part of wisdom to forecast the growth of communities they serve, and to be prepared to meet new conditions as they arise."

If this is true in regard to telephone equipment, the supply of which may be increased by manufacture at any given time, how much more applicable is the rule to a vanishing commodity such as natural gas, which exists in strictly limited quantities and is incapable of renewal or increase. After large sums have been spent in creating facilities for its distribution and sale, after consumers have adapted their mains and factories to its use, it would be mismanagement amounting to a breach of faith not to provide and maintain as an integral part of the property the most substantial territorial reserves.

The capital invested in such reserves cannot be withdrawn by the Company at pleasure to be devoted to other uses without decreeing the death of the entire enterprise; and having thus passed beyond the voluntary withdrawal of the Company, it is as utterly and irrevocably devoted to the public use as anything else that it owns. It is in no sense a speculative investment or a convenient depositary for surplus funds.

3. The District Court erred in holding, contrary to the undisputed evidence, that the value of appellant's tangible or physical property, including going concern value and working capital, was not more than $29,990,000.

The value placed by the District Court upon the so-called tangible or physical property of the appellant (which, as stated at page 14, *supra*, does not include its gas territory)

is an aggregate of $26,000,000 as the fair value of the inventory, $990,000 working capital, and $3,000,000 for going concern value, totalling $29,990,000. The allowance for working capital is agreed to on all hands, but the other items are in dispute. To these we address ourselves.

In cases of this character involving many items of property, there are quite often several valuations by different engineer experts, who disagree as to the value of the various items going to make up the whole property or as to the value of the same as a whole. In the instant case, however, while the property has been valued or appraised by engineer experts employed by both sides, it is notable that there is no disagreement as to the items of property making up the plant or as to their value new. Such disagreement as there is is only in regard to the theories upon which overhead charges, depreciation and going concern value are to be computed.

(a) *Fair value of the inventory.*

Appellant's witness, Uebelacker, of the firm of Ford, Bacon & Davis, with a corps of assistants, made a detailed inventory of the so-called physical property of the appellant. The general nature of this property has been described at page 14 hereof, *ante*, and need not be repeated here. The result of his labors was embodied in several large volumes, but in view of the fact that the expert employed by appellees conceded the correctness of his inventory and appraisal in every particular, only a summary thereof has been incorporated in the Record (Uebelacker Exhibit No. 1, R., 496-552). His testimony explanatory of and supplemental to this Exhibit begins at R., 195.

In performing this task, the witness examined every item of the Company's property and noted its present condition at the time, uncovering the pipe lines at such frequent intervals as would assure him of their size and present condition. He then applied to each item of property the present day price thereof, and by adding these together reached the

total sum which would be required to construct the plant new. To this sum he added what he considered the proper overhead charges, and thus reached the conclusion that the cost of constructing the physical plant new, less observed deterioration, would be $28,631,320, as follows (Table, R., 537-8):

Total Production System (new, less deterioration)	$46,577,095	
Less land, leaseholds and natural gas rights	36,449,176	
		10,127,919
Total Transmission system (new, less deterioration)		14,424,364
Total Distribution system (new, less deterioration)		3,349,509
Total General property (new, less deterioration)		729,528
		$28,631,320

After Mr. Uebelacker had completed his report and testified in support thereof, an adjournment was taken for the purpose of enabling protestants to verify or controvert his statements. They employed for the purpose W. J. Hagenah, whose experience in such work is detailed in his testimony beginning at page 424 of the Record. He and his corps of assistants spent several months in this work and found absolutely no matter of disagreement with Uebelacker, either as to a single item of property to be included in the inventory or as to the value to be attributed to any such item (R., 467, 486). Hagenah's points of difference with Uebelacker are entirely on matters of theory, viz., the allowance for overheads, allowance for depreciation and allowance for going concern value.

(b) *Allowance for overheads.*

Mr. Hagenah approves all of Mr. Uebelacker's allowances for general overheads with the exception of cost of financing, amounting to 4%, and that of interest during construction which, in the former's opinion, should be 7% instead of 8%, Uebelacker's rate (R., 475-6).

As to the cost of financing, Hagenah (R., 475), who is supported by protestant's accountant witness Jirgal (R., 407, 422), takes the position that this is nothing more than bond discount which, under what these witnesses state is a proper system of accounting, should be amortized over the life of the securities to which it appertains. But Mr. Uebelacker, both in his report (R., 519) and in his oral testimony (R., 197-8), makes it very clear that this item of 4% which he has included is not discount upon securities at all and "must not be confused" therewith. It is simply the "expense of assembling the necessary capital for the enterprise", including "the expense of distributing securities to the public". This is unquestionably an inevitable incident of financing any undertaking requiring any considerable amount of capital.

Re Utah Power & Light Co. (Utah), P. U. R. 1922 A, 436;
Re Utah Light & Traction Co. (Utah), P. U. R. 1920 B, 262.

As to the rate of interest during construction, Uebelacker testifies that his allowance of 8% is based upon his actual experience in the construction of a similar plant, while Hagenah's estimate that 7% is a sufficient allowance is admittedly merely an opinion (R., 476), he having in mind no specific instance of any plant that has been financed on that basis, and never having had any actual personal experience in the construction of a plant like appellant's (R., 475).

Thus we have a deduction based upon experience contrasted with a mere opinion not based upon any actual data. As this Court said in *Pacific Gas & Electric Company* vs. *San Francisco*, 265 U. S., 403, 406:

> "Facts shown by reliable evidence were preferable to averages based upon assumed probabilities."

(c) *Allowance for depreciation.*

As noted above, Mr. Uebelacker's computation of the reproduction cost new of appellant's physical properties, less deterioration and exclusive of going concern value, is $28,631,320. Appellees' witness Hagenah values this property upon the same basis at $23,969,180 (Table, R., 1166-8, his total of $30,702,100 including the book cost of the gas land, leasehold and rights, $6,732,920). A part of this difference, amounting to $1,662,140, is accounted for by the difference in theory between these witnesses upon the question of overheads, heretofore discussed. The remainder results from the different theories of computing depreciation adopted by them respectively.

Uebelacker, as we have shown, in determining the present value of the physical property *observed it in its actual condition*, and valued it upon that basis. Hagenah expressly admits that Uebelacker's conclusion is right if his theory is sound (R., 486) and that he would have come to the same conclusion if he had adopted the same theory throughout. He contends, however, that this method is not applicable in instances where the life of the property depends on the life of the field, and that in those instances depreciation should be computed on the "straight line" basis—that is, at a certain uniform percentage each year during the life of the property (R., 426-7).

That Mr. Uebelacker's method of computing depreciation is the correct one would appear to be settled by the decision of this Court in *Pacific Gas and Electric Company* v. *City and County of San Francisco*, 265 U. S. 403, where the same

question was involved and what was termed the "modified sinking fund method" was used to determine accrued depreciation. Respecting this, the Court said (p. 406):

> "Appellant objects to the application of this method and insists that depreciation should have been ascertained upon full consideration of the definite testimony given by competent experts who examined the structural units, spoke concerning observed conditions and made estimates therefrom. As these examinations were made subsequent to the alleged depreciation for the definite purpose of ascertaining existing facts, we think the criticism is not without merit. *Facts shown by reliable evidence were preferable to averages based upon assumed probabilities.* When a plant has been conducted with unusual skill the owner may justly claim the consequent benefits. The problem was to ascertain the probable result of the specified rate if applied under well known conditions, not to forecast the probable outcome of a proposed rate under unknown future conditions." (Italics appellant's.)

This case, among others, was cited and followed in *McCardle v. Indianapolis Water Co.*, 272 U. S. 400, 416, where the straight line method of computing depreciation "based on age and the estimated or assumed life of perishable elements", was expressly condemned, the Court saying:

> "The testimony of competent valuation engineers who examined the property and made estimates in respect of its condition is to be preferred to mere calculations based on averages and probabilities."

The Public Service Commission of West Virginia were of the opinion that Mr. Uebelacker's conclusions must be adopted. Commissioner Stathers says on this point (R., 127):

> "Having used the observed depreciation method in arriving at the present condition of the property, we see no reason for departing from such method and ac-

> cepting the theoretical, speculative and arbitrary assumptions and calculations concerning the future needs of this company for depreciation purposes,"

citing *Pacific Gas and Electric Company* v. *City of San Francisco, supra.*

Mr. Uebelacker's method is, nevertheless, questioned by the Court below. It contented itself, however, with pointing out that the Commission approved the procedure of Mr. Uebelacker resulting in a figure for reproduction new, less observed depreciation, of $28,366,988. This, says the Court, (R., 1246) the Commission would no doubt have adopted had it not had before it other testimony as to "investment, cost and many other more or less relevant matters to which they felt in duty bound to give consideration". And since one of the majority members of the Commission concluded that the fair present value of the tangible property was $25,000,000, and his colleague $26,000,000, the latter is adopted by the Court without more saying as the outside figure. Neither the Commission nor the Court furnish any figures or expose the mental process by which their conclusions are reached. Both Chairman Stathers (R., 95) and Commissioner Divine (R., 1356) say in substance that they gave consideration to all the different valuations which were before them. If they took into consideration Mr. Hagenah's valuation they relied upon a conclusion which is condemned by the passage from Chairman Stathers' opinion quoted above. Just what weight was given by either Commissioner to the various valuations reached upon conflicting theories does not appear but, as we have pointed out (*supra*, p. 43), Uebelacker and Hagenah agree that upon the former's theory of "observed depreciation" the present fair value of the property is $28,631,320.

Cost of Dry Wells.

It should be mentioned that in Uebelacker's inventory and appraisal of appellant's physical property there is included

an item of $254,332, the cost to appellant of drilling "dry" or unproductive wells. Mr. Stathers (R., 89), although he admits that the claim might be made that some value should be given to such "dry wells" because of the fact that they have had a certain use in helping to delimit the productive area, expresses the opinion that such value should be and is included and considered as one of the elements of going concern value, and therefore declines to consider this item as entering into the present fair value of appellant's physical property. He inquires whether a public utility furnishing water could include a "dry well" in determining the present fair value of such utility, or could so include the cost of an abandoned reservoir. While the answer to the latter question may well be in the negative, it is contended that the former, like appellant's case, presents a different situation. The purpose of appellant's being is the discovery and supply of natural gas. The boundaries of the pool and the direction in which it extends can only be determined by the drilling of a number of wells which, together, indicate the location of the pool and enable the drilling of such additional wells as may be necessary at a minimum risk of failure. The cost of the experimental wells which turn out to be unproductive therefore enters into the expense of locating the gas just as much as that of the productive ones which actually supply it, and it is therefore submitted that this item should not have been disallowed.

The Court (R., 1245) below disposed of this item by the statement that it was unable to make certain whether any part of it was included in Mr. Uelselacker's allowance for depreciation, and the further statement that the item is so small as to be unessential. This item is nearly a thousand times as large as that which this Court, in *Ohio Utilities Company* vs. *Public Utilities Commission of Ohio*, 267 U. S. 359, 363, took into consideration, commenting upon the fact that there was no explanation in the Record of its disallowance.

If, however, the Court is of the opinion that the cost of the unsuccessful wells does not properly enter into that of appellant's production plant which has resulted in the supply of natural gas which the protestants and others are now enjoying, Mr. Uebelacker's valuation discussed above will necessarily be reduced by the amount of this item, $254,332.

(d) *Going concern value.*

It is admitted by all parties and abundantly established by the decisions of this Court that there is an element of value inhering in this and all similar properties variously termed "going value" and "going concern value."

> *City of Knoxville* vs. *Knoxville Water Company*, 212 U. S., 1;
> *Des Moines Gas Company* vs. *Des Moines*, 238 U. S., 153, 165;
> *McCardle* vs. *Indianapolis Water Company*, 272 U. S., 400.

This element is "an expression of the added value of the plant as a whole over the sum of the values of its component parts" (*City of Knoxville* v. *Knoxville Water Co.*, 212 U. S. 1, 9), is a property right upon which the owner is entitled to a fair return, and must be considered in valuing the property for rate making purposes.

One of the points of difference between the experts, however, is as to the value which should be assigned this element in the instant case. The appellees' witness Hagenah (R., 428-9) expresses the opinion, for reasons stated by him, that 10%, in this case $3,000,000, is a proper allowance for going concern value. Appellant's witness Uebelacker (R., 208-9) estimates the going concern value of the appellant's property at from $3,000,000 to $3,500,000 at the lowest, and instances many facts which he thinks would justify a larger value, but states that there is no formula for estimating it

in dollars and cents. At a later stage of his testimony, however, (R., 224) he estimates the going concern value at the difference between reproduction cost new and reproduction cost new less deterioration, or $8,423,105 (table, p. 15, *supra*). He explains this by the statement that while the plant is not new and deterioration would have to be allowed for in valuing it as a dead plant, it was, according to his observation, functioning as efficiently as a new plant or its equivalent would do, and for this reason was worth as a functioning plant 100% of the reproduction cost new.

We commend this view to the Court as entirely reasonable. This Court has recently, in *McCardle* vs. *Indianapolis Water Company*, 272 U. S. 400, p. 415, expressed the opinion that under the decisions which it cites, 10% of the value of the physical elements would be *low* as an allowance for going value when the "impressive facts" reported in that case were taken into account. It is confidently submitted that the facts disclosed by the record in this case are at least equally impressive in this connection. If, however, the Court inclines to the opinion that Hagenah's estimate of 10% rests upon a sounder basis, that rate will necessarily have to be applied to the increased rate base if the Court sustains appellant's contentions hereinbefore discussed as to the overhead and other items.

For convenience we append a table showing by way of summary the differences in the valuations of the witnesses Uebelacker and Hagenah:

Physical Property	*Uebelacker (R. 536-8*	*Hagenah R. 1166-8*	*Difference*
1. Reproduction new without overheads	$29,991,114	$29,992,502	1,388
2. Overheads	7,063,311	5,398,650	1,664,661
3. Value new	37,054,425	35,391,152	1,663,273
4. Value depreciated (including reduced overheads)	28,631,320	23,969,180	4,662,140
5. Going concern value	8,423,105	3,000,000	5,423,105
6. Present fair value, physical property and going concern value	37,054,425	26,969,180	10,085,245
7. Gas properties	36,449,176	6,732,920	29,716,256
8. Working capital	990,000	990,000	
Total of last three items, 6, 7 and 8	$74,493,601	$34,692,100	$39,801,501

4. *The District Court erred in not including in the value of appellant's tangible or physical property the sum of $2,044,778.24, being new investment in physical property added and actually put in use in the public service during the year 1924, according to the undisputed evidence.*

It will be noted that the Public Service Commission declined to include as an item of value the larger part of these additions to the plant during the year 1924 for the reason that as it held, it was not specifically shown that they were being used in the public service (R., 95-6). Upon the hearing of the case in the Court below, however, it was clearly proven

that all of these items of property had been placed in use during the year 1924 (R., 335-6.) The testimony of the witness Hightower is explicit. This proof was evidently entirely overlooked by the Court. The item should be added to the total of $74,493,601 above given.

II.

The District Court erred in holding, contrary to the undisputed evidence, that the value of appellant's property devoted to the public service in West Virginia was not more than $11,251,499.

If this Court agrees with appellant's contentions discussed in the preceding Point I as to the proper rate base, it is manifest that the same facts and principles are equally applicable in determining what proportion of appellant's property is used and useful in the public service in West Virginia. The computation of the West Virginia rate base is merely a matter of applying the proper percentages to the value of the entire property; and if an erroneous result has been reached in determining the latter, the error necessarily is carried into the former. Appellant's contentions in this respect, based upon the testimony of its witness Uebelacker (R., 213, *et seq.*), and the tables in his Exhibit 5 (summarized at R., 593), result in a total of $17,702,672 on the basis of reproduction cost new and one of $16,477,205 reproduction cost new less deterioration. The latter does not include anything for going concern value; nor does it include the allocable proportion of the $2,044,778.24 worth of new property referred to in subdivision 4 of the preceding Point (*supra*, p. 49). Upon this witness's theory that going concern value in the case of this Company is equivalent to the difference between reproduction cost new and the same less deterioration, such going concern value is of course included in the total of $17,702,672.

Appellee's witness Jirgal, in his table (R., 1067) and testimony explanatory thereof (R., 381, *et seq.*) computes the West Virginia rate base at $8,278,267. This calculation is, however, based entirely on the book cost of the property (R., 381), which method it is believed has been demonstrated to be absolutely erroneous. His estimate may therefore be disregarded.

The Court below (R., 1272-3) computed the "value of property used in regulated business" as follows:

Tangible property	$7,530,826.
Going Concern value	847,350.
Working capital	282,546.
Gas reserves	2,590,677.
Total	$11,251,399.*

In making this computation the Court states that "the parties have agreed as to percentages of the value of various portions of its property properly allocated to its public service activities." While the exact percentages are not stated in the opinion, it appears from the Court's calculation it attributed 28.96% of the tangible property to the regulated service and 25.13% of the assumed value of the gas reserves. Appellant is willing to concede that these percentages are substantially correct, although as a matter of fact there are slight differences between the experts in this respect. The application of such or similar percentages to the total rate base will therefore result in ready ascertainment of the proportion thereof applicable to the public service in West Virginia.

Appellant's contention as to the value of the property devoted to the public service in West Virginia upon which it is entitled to a return appears under Point VI *infra* and is for brevity's sake omitted here.

*The Court seems to have made a slight error of $100 in addition (R., 1272), making this total $11,251,499.

III.

The District Court erred in holding, contrary to the undisputed evidence, that 3.65% per year of the value of appellant's property was a proper allowance for amortization.

There is a radical difference between a company engaged in producing, selling and distributing natural gas and one whose business is supplying artificial gas, electricity or water. The commodity supplied by the latter may for practical purposes be considered as inexhaustible. The former resembles a mining or an oil company in that the product which it purveys, when once consumed, cannot be renewed and is gone forever.

It necessarily follows that such portion of the physical plant of a natural gas company as cannot be commercially used for other purposes when the supply of gas is exhausted then becomes worthless apart from such salvage value as the material composing it may have.

In order, therefore, that the investor may recover the value of his property the price of the gas to the consumer must include: (1) the value of the gas as it is supplied and consumed, and (2) a proper allowance for amortization of the physical property used in supplying it while it is available, but which will become useless when it gives out.

It is thought that it has been shown that the thing to be thus amortized is the fair value of the property at the time of the inquiry—not its original cost, whether that be greater or less. In other words, it is the rate base which is the subject of the amortization.

Minnesota Rate Cases, 230 U. S. 352, 454;
Willcox v. *Consolidated Gas Company*, 212 U. S. 19;
Missouri, ex rel, Southwestern Bell Tel. Co. v. *Public Service Commission*, 262 U. S. 276;

Bluefield, etc. Company v. *Public Service Commission*, 262 U. S. 679, 690;

McCardle v. *Indianapolis Water Company*, 272 U. S. 400;

Michigan Public Utilities Commission v. *Michigan State Tel. Co.*, 228 Mich. 658; 200 N. W. 749-752.

While some of the authorities cited lay down the rule in regard to depreciation their doctrine is as clearly applicable to amortization, if not more so.

Chairman Stathers of the West Virginia Public Service Commission accepts this view (R., 123-4). He falls into the error, however, of deducting from the rate base which he reaches of $35,999,969.14, in addition to the working capital of $990,000 the further sum of $14,028,737.03 which he says is the amount of property already amortized as of December 31, 1923. He overlooks the fact that the last mentioned sum has already been deducted by Uebelacker in arriving at his valuation of the property which the Chairman says he has considered (R., 95), the result being a double deduction for the purpose of his calculation of the sum to be amortized. The effect of this is to deprive the appellant of any compensation whatever for the gas already sold and delivered to its customers and the depreciation which its plant has already suffered.

Chairman Stathers assumes a life for the property of eighteen years from December 31, 1923, and finds 4.15% as the rate sufficient and necessary for the amortization of the unamortized portion of the present fair value thereof.

Commissioner Divine disagrees with Chairman Stathers as to present fair value being the proper basis of amortization and holds that only the actual investment can be amortized.

But even if Chairman Stathers were correct, and appellant had collected in the past more than it should have done, its present position would not be affected thereby. This Court has repeatedly held that the fact that a public utility

has collected excessive rates in the past cannot be considered in determining its rates for the future.

> *Board of Public Utility Commission* v. *New York Tel. Co.*, 271 U. S. 23, 31, 32, and authorities there cited.

Appellees' witnesses, Hagenah (R., 448) and Jirgal (R., 410-1) have rejected the present fair value basis and based their computations for purposes of amortization solely on actual book cost. The error of this theory has been pointed out.

The Court below evolved a different conclusion. As we have shown, it disagreed with the Commission in its view that all appellant's gas reserves were used and useful in the public service and held that only a five years' supply, or two hundred and forty nine billion cubic feet, was to be considered as entering into the rate base (R., 1263-4). In discussing the subject of amortization, however, it proceeds on the assumption that eighteen years is the probable term of appellant's activity in the natural gas business (R., 1235-6). It must, therefore, for this purpose assume that the appellant has a supply of gas to last this period, thus introducing as a factor Mr. Davis' estimate of six hundred and sixty three billion cubic feet. The inconsistency is apparent. If appellant had only a five years' supply of gas available, this gas and the plant would necessarily have to be paid for and amortized in that length of time. If, on the contrary, it has eighteen years' supply which it is entitled to amortize over that period, it is difficult to see why it is not entitled to a return upon the money spent in securing and holding it. Upon the Court's theory it would ultimately receive payment for only 5/18ths of the gas which it is assumed it will deliver to its customers over the period of eighteen years.

Further, assuming that eighteen years is as fair a prophecy as can be made of the term of appellant's natural gas

business, no sufficient reason appears for the Court's reduction of the rate of amortization from 4.15% as determined by Chairman Stathers to 3.65%. The Court calculates that a little less than 3.9% computed annually at 4% for eighteen years will produce the necessary sum. It cites no precedent where this theory has been adopted, nor has appellant been able to find any.

It is not even yet content and goes on to reduce this 3.9% to 3.65% upon its expressed conviction that the latter will be a "generous allowance" for amortization (R., 1236). The only reason stated for this last paring is that: "It is highly probable the plaintiff can so use funds of its amortization reserve so as to get more than 4% per annum for them. *Savings Banks will pay it as much*" (Italics ours).

As indicated above, Chairman Stathers (R., 124) computes the sum to be amortized as $20,981,232.11, 3.65% of which is $765,814.97. If we assume $5,000 as the limit which any savings bank will take from any one depositor the practical value of the suggestion italicised becomes apparent.

IV.

It was error to add to the earnings of the appellant, as reflected by its books, the sum of $1,495,496.69 as additional compensation which it was held should have been charged to certain customers of the appellant for gas sold them in excess of the price actually charged and received.

It appears (R., 379, Jirgal Exhibit 1, R. 1065,) that appellant had contracts with Columbia Gas & Electric Company and Ohio Fuel Supply Company under which it sold them in 1923 17,613,173,000 cubic feet of gas at the average rate of 7.25 cents per thousand cubic feet, a total of $1,282,100.69. The two companies mentioned own all of appellant's capital stock. Appellee's witness Jirgal calculated that a fair rate

tor this gas would have been 15.77 cents per thousand cubic feet, or $2,777,597.38, and "adjusted" appellant's earnings accordingly by surcharging them with the difference of $1,495,496.69. In this he was sustained by the majority of the Commission (R., 132,139). In reference to this item, the Court says (R., 1238):

> "In determining what return plaintiff made to those interested in it, we do not understand that it questions that there should be added to its earnings as they appear upon its books, the difference between the price paid to its stockholders and what it could have gotten from others for the gas they took."

Appellant more than questions the propriety of this "adjustment"—it denies it.

Appellant is entitled to a fair return upon its property *used and useful in the public service in West Virginia*, irrespective of its profits or losses in its other business:

> *Smyth* vs. *Ames*, 169 U. S., 466, 541;
> *Northern Pacific Ry. Co.* vs. *No. Dak.*, 236 U. S. 585;
> *Norfolk & Western Ry. Co.* vs. *W. Va.*, id., 605;
> *Vandalia Railroad Co.* vs. *Schnull*, 255 U. S., 113;
> *Atchison, Topeka & Santa Fe Ry. Co.* vs. *State*, 47 Okl., 237; 148 Pac., 144, 148.

The question of what is a fair return upon that portion of its property is the only one of which the Public Service Commission of West Virginia has jurisdiction.

In *Chas. Wolff Packing Co.* vs. *Court of Industrial Relations*, 262 U. S., 522, this Court said, through the Chief Justice (p. 539):

> "To say that a business is clothed with a public interest is not to import that the public may take over its entire management and run it at the expense of the owner."

Appellant charges that this is precisely what protestants have persuaded the Public Service Commission of West Vir-

ginia to attempt to do in the case at bar with appellant's business. That body has injected into the question of a fair return upon appellant's property used and useful in the public service, which alone it is empowered to regulate, an element relating solely to the business management of other property not so used and wholly unconnected therewith.

> "Broad as is its power to regulate, the State does not enjoy the freedom of an owner. Appellee's property is held in private ownership; and, subject to reasonable regulation in the public interest, the management and right to control the business property of the company belong to its owners."
>
> *Banton* vs. *Belt Line Railway Corp.*, 268 U. S., 413, 421.

There is no intimation in the Record that the supply of gas furnished to the protestants and other domestic and industrial consumers in West Virginia is not adequate and that the service is not efficient. The contrary appears. Appellant is compelled to and does take care of its domestic consumers first, although at the season's peak demand this requires the curtailment of its industrial consumers, which is the more profitable branch of its business (R., 340, 347). It is submitted that as long as it meets the requirements of its public service consumers, it is no one's business but its own what it does with its surplus output. It therefore respectfully insists that the so-called adjustment of its revenues by the addition of $1,495,496.69, supposed to represent the difference between what it might theoretically charge its parent companies for gas not required for the public service, and what it does actually charge them, for reasons with which the Public Service Commission is not concerned, is clearly erroneous.

> *State of Missouri ex rel. Southwestern Bell Telephone Co.* vs. *Public Service Commission*, 262 U. S., 276, 289, citing and quoting from *State Public Utilities Commission* vs. *Springfield Gas & Electric Co.*, 291 Ill., 209, 234.

V.

The District Court erred in charging appellant's earnings with the sum of $934,393.41 as presumptive profit on the extraction of gasoline from the natural gas marketed by appellant, instead of the true amount earned by appellant from such gasoline extraction, as reflected by its books.

It appears that natural gas when discharged from the well contains a certain amount of gasoline which is marketable. It further appears that by the extraction of this gasoline the gas is made more suitable for transmission in that there are eliminated from it those liquid particles which might be left in the transmission lines with the double effect of retarding the transmission, and attacking the rubber in the joints (R., 220).

Virginia Gasoline & Oil Company is a corporation, all of the stock of which is and was at the date of the judgment under review held by the same parent companies which then held the stock of appellant and in the same proportions. Appellant has a contract with said Virginia Gasoline & Oil Company to extract the gasoline from the natural gas which it produces (R., 130, 225), by the terms of which appellant receives a royalty of one-eighth of all gasoline produced. This royalty has been regularly paid and accounted for in the statement introduced by the appellant. Appellees' witness Jirgal was of the opinion, however, that this did not give to the Gas Company a sufficient return for the gasoline extraction privilege, and accordingly made a further "adjustment" of appellant's earnings by including therein one-half of the net earnings of the gasoline for 1923, $934,393.41 (R., 1158), the proportion of which he allocated to the West Virginia Public Service being $234,626 (R., 1162). Realizing that this addition to its income would subject

appellant to increased income taxes, he made a calculation thereof resulting in the allocation to the West Virginia regulated property of $37,836. of such tax (R., 1162). This adjustment was sustained by the Commission on the theory that the parties to the contract in question are so closely allied that the royalty reserved cannot be taken as a true measure of value (R., 131, 139) and the Court below agrees with this position upon the authority of *City of Charleston* vs. *Public Service Commission*, 95 W. Va., 91. Appellant contends that this conclusion is erroneous. It rests upon the mere assumption that the consideration fixed by the contract for the gasoline extraction privilege is unfair to the public because the stockholders of the contracting parties are the same. It is submitted that there is no ground for any such assumption; that the presumption is the other way, and the burden of proof is upon those who attack the obligation of the contract.

> *State of Missouri, ex rel, Southwestern Bell Telephone Company* vs. *Public Service Commission*, 262 U. S. 276.
>
> "Every investment may be assumed to have been made in the exercise of reasonable judgment, unless the contrary is shown."

Per Mr. Justice Brandeis, id., page 289, footnote.

See also

> *Interstate Commerce Commission* v. *Chicago Great Western Ry. Co.*, 209 U. S. 108, 119.

The only evidence in the Record that in any way might suggest that this contract is anything but fair is that of the witness Krebs (R., 486, *et seq.*). The evidence shows that his experience has not been large. He testified at length to the terms of one contract made upon the basis approved by the Commission in the instant case, but it further appeared that the party who undertook to pay a one-half roy-

alty became insolvent and was unable to carry it out (R., 489-90).

But even if it be considered that one-half of the net profits derived from the gasoline business is a fair consideration for the privilege of extracting the gasoline, it is submitted that it was not proper to take the net earnings of 1923 as typical.

It appears that this year 1923 was an exceptional one. The gasoline earnings for the year 1924 are shown by months in Hightower Exhibit Z, (inserted between pages 1002 and 1003 of Record) and the total for that year in Jirgal Exhibit No. 9a (Rec., p. 1160). It will be noticed from this latter exhibit that for the year ended December 31, 1924, the net gasoline earnings were $1,066,110.32 as compared with $1,868,786.82 for the year 1923 (Rec., p. 1066). This very substantial decrease in the earnings from gasoline is accounted for by the fact that during the early part of the year 1924, a new process known as the "cracking process" was put in common use for the extraction of gasoline from crude petroleum which resulted in obtaining more than twice the quantity of gasoline that was formerly obtained from the same quantity of oil; and, inasmuch as the quantity of gasoline produced from natural gas is less than 10% of the total production of gasoline in the United States, the remainder being made from crude petroleum, the price was necessarily controlled by the cost of producing from crude petroleum (Rec., 413, *et seq*).

Mr. Hagenah expressed the opinion that the price of gasoline was only temporarily depressed. The chart introduced by Mr. Hightower (insert between pages 986 and 987 of Record) shows the falling trend of gasoline prices since the year 1920. It appears from this chart that the price received by the producer for gasoline fell from 25.73 cents in 1920 to 11.45 cents in the latter part of 1924.

Gasoline is an article of such universal use and the price so generally known that the Court no doubt will take judicial notice of the fact that Mr. Hagenah's prophecy has not up to this time been fulfilled.

VI.

The rates complained of in the bill are insufficient to produce a fair return on the value of appellant's property, and are therefore confiscatory.

If appellant is correct in its principal contention; viz, as to the value of its gas properties and that the whole of such value must be included in computing any rate base, a simple though somewhat rough calculation will show that even if every other point of difference be conceded, the existing rates are confiscatory by a wide margin.

We illustrate this by assuming a rate base, a net income from the property devoted to the public service in West Virginia, and a rate of return, on the theory that every matter in controversy, except as to the gas properties, is decided against appellant.

Hypothetical Rate Base.

Physical property, new less depreciation, including overheads (Hagenah's figures, Table, p. 43, *supra*, items 4 and 5	$23,969,180
Going concern value	3,000,000
Working Capital	990,000
Addition in 1924	2,044,778
Gas properties (lowest valuation by any of appellant's witnesses	30,000,000
Total	$60,003,958

West Virginia rate base.

Appellant's witness Uebelacker (R., 593) found the reproduction value new, less deterioration, of the property which he allocated to the West Virginia Public Service, to be $16,477,205, which is 24.9% of the value of all the property so found by him to be $66,070,496 (R., 536). This includes allocation of working capital, but not going concern value.....

Appellees' witness Jirgal's corresponding figures in his table at page 1067 of the record work out a similar ratio of 27.34%.....

Uebelacker's ratio of .249 has therefore been used for this demonstration as being smaller and less favorable to appellant. Being applied to the several items of the hypothetical rate base above, it gives the following result:

Physical Property	$5,968,326
Going Concern Value	747,000
Working Capital	246,510
Additions in 1924	509,150
Gas properties	7,470,000
Total	$14,940,986

which is accordingly assumed as the value of appellant's property used and useful in the public service in West Virginia .....

Net Earnings on West Virginia Rate Base as Above.

Uebelacker found these to be (R., 591, gross $2,155,475, less expense $946,038)		$1,209,437
Jirgal computed them, after his various "adjustments", at R., 1067		1,567,373
The Court below, at	$1,555,593	
or, after deducting what it says is "the proper proportion of the total sum allowed for annual depreciation" (R., 1272)	113,658.	
		1,441,935

Rate of Return.

	Per cent.
Chairman Stathers allowed:	
For annual depreciation (R., 128, 132)	1.12
For amortization (R., 125, 132)	4.15
For return (R., 130, 132)	8.00
	13.27

The Court held (R., 1236) that a "generous" allowance for amortization was	3.65
It seems to acquiesce in a return of	8.00
It also, apparently, adopts by reference the allowance for annual depreciation adopted by the Commission (R., 128, 1236)	1.12

Which rates are applied as follows:

Depreciation @ 1.12% on $6,477,476 (Physical Property)	$72,548
Return @ 8.00% on $14,940,986 (Total)	1,195,279
Amortization @ 3.65% on $14,694,476 (Total excluding working capital)	536,348
Total minimum sum which appellant must earn	$1,804,175

The application of these minimum rates for return, amortization and depreciation to the divisions of our minimum hypothetical rate base of $14,940,985 gives $1,804,175 as the minimum sum which appellant must earn upon its property used and useful in the public service in West Virginia if the confiscation of its property is to be avoided. This is over 15.12% more than the largest estimate made by any one of its net earnings from its so called regulated property for the year under scrutiny.

Indeed even a further concession might be made for the purpose of calculation and the point be conceded that the whole value of the gas reserves need not be included in the rate base but only, as held by the court, the part thereof which is sufficient for a five years supply; still it would be apparent that the present rates are confiscatory inasmuch as it appears on the face of the court's opinion that the court miscalculated the correct amortization rate. As above stated (*supra*, p. 55), the court sought an amortization rate which compounded at 4% annually would provide for the complete amortization in 18 years and found the same to be 3.9% (paring this down later to 3.65% for reasons not explained although for the present purpose the difference is immaterial). However, at the same time the court al-

lowed only so much of the gas reserve to go into the rate base as would be exhausted in five years. These two positions are clearly inconsistent. As pointed out at page 54 of this brief, it is only fair that if the Company is to be limited in its rate base to a five year supply, it must be allowed an amortization rate which will amortize that in five years. It cannot be limited to a five year supply rate base and to an eighteen year amortization rate. If, therefore, for purposes of argument, five years supply is used for a rate base, the figure which would be required to effect amortization in five years compounded annually at 4% would be (according to standard bond tables) 18.46% (that is to say, the figure for the five year period corresponding to the 3.9% figure of the court for the eighteen year period). And if this percentage is applied to the value of the Company's property devoted to public service in West Virginia on the basis fixed by the court (i. e., valuing the gas properties at $10,317,311, the five years supply, instead of $30,000,000, the eighteen years supply, as in the above table), we arrive at an equally clear demonstration of confiscatory rates, viz:

Hypothetical Rate Base

Physical Property (as above)	$23,969,180
Going Concern Value " "	3,000,000
Working Capital " "	990,000
Additions in 1924 " "	2,044,778
Gas Properties (5 year basis)	10,317,311
Total	$40,321,269

West Virginia Rate Base
(Using ratio as above of 24.9%)

Physical Property	$5,968,326
Going Concern Value	747,000
Working Capital	246,510
Additions in 1924	509,150
Gas Properties (5 year basis)	2,569,010
Total	$10,039,996

Net Earnings on West Virginia Rate Base

As above	$1,441,935

Rate of Return

Amortization (as corrected)	18.46%
Return (as above)	8.00%
Depreciation (as above)	1.12%
Depreciation @ 1.12% on $6,477,476 (Physical Property)	$72,548
Return @ 8.00% on $10,039,996 (Total)	803,200
Amortization @ 18.46% on $9,793,486 (Total excluding working capital)	1,807,878
Total minimum sum which appellant must earn	$2,683,626

Applying these minimum rates to the above divisions of the minimum hypothetical rate base of $10,039,995 gives $2,683,626 as the minimum sum which the appellant must earn upon its property used and useful in the public service in West Virginia if confiscation of its property is to be avoided. This would show the confiscatory character of the present rates even more strongly than the calculation given first above. The sum is so much more than the largest estimate made by any one of the net earnings from the so called regulated property for the year under scrutiny that it becomes immaterial whether an adjustment of the above amortization rate of 18.46% corresponding to the downward adjustment made by the court from its rate of 3.9% or to 3.65% is made or not. There can be no doubt that if the Company were limited to including in its rate base only a five year supply, an amortization rate corresponding to that basis will prove the present rates as confiscatory as they are on the basis of including in the rate base the whole eighteen year supply for which this brief is contending.

As stated, appellant has conceded for purposes of the foregoing calculations all of the points in controversy (except those relating to its gas properties) which it discusses in

this brief, including overheads, method of computing depreciation, going concern value, amortization allowance and Mr. Jirgal's "adjustments". It, of course, insists on these points and each of them, nor does it concede that 8% is a fair rate of return upon its investment in view of the hazardous nature of the business and the exceptional value of the article which it purveys and of the service which it provides; but inasmuch as the province of courts is not to make rates, but merely to determine whether a particular rate established by legislative authority is or is not violative of the constitutional guarantees, it can serve no purpose to enter upon a discussion of this phase of the situation. It is respectfully submitted that appellant has by an overwhelming preponderance of evidence shown that the existing rates are confiscatory, and that the courts below erred in holding that they were compensatory.

VII.

The order or judgment of the District Court should be reversed and this cause remanded with appropriate directions.

Respectfully submitted,

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IN THE

Supreme Court of the United States,

OCTOBER TERM, 1927.

No. [redacted] 4

UNITED FUEL GAS COMPANY,
Appellant,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, *et al.*

REPLY BRIEF FOR APPELLANT.

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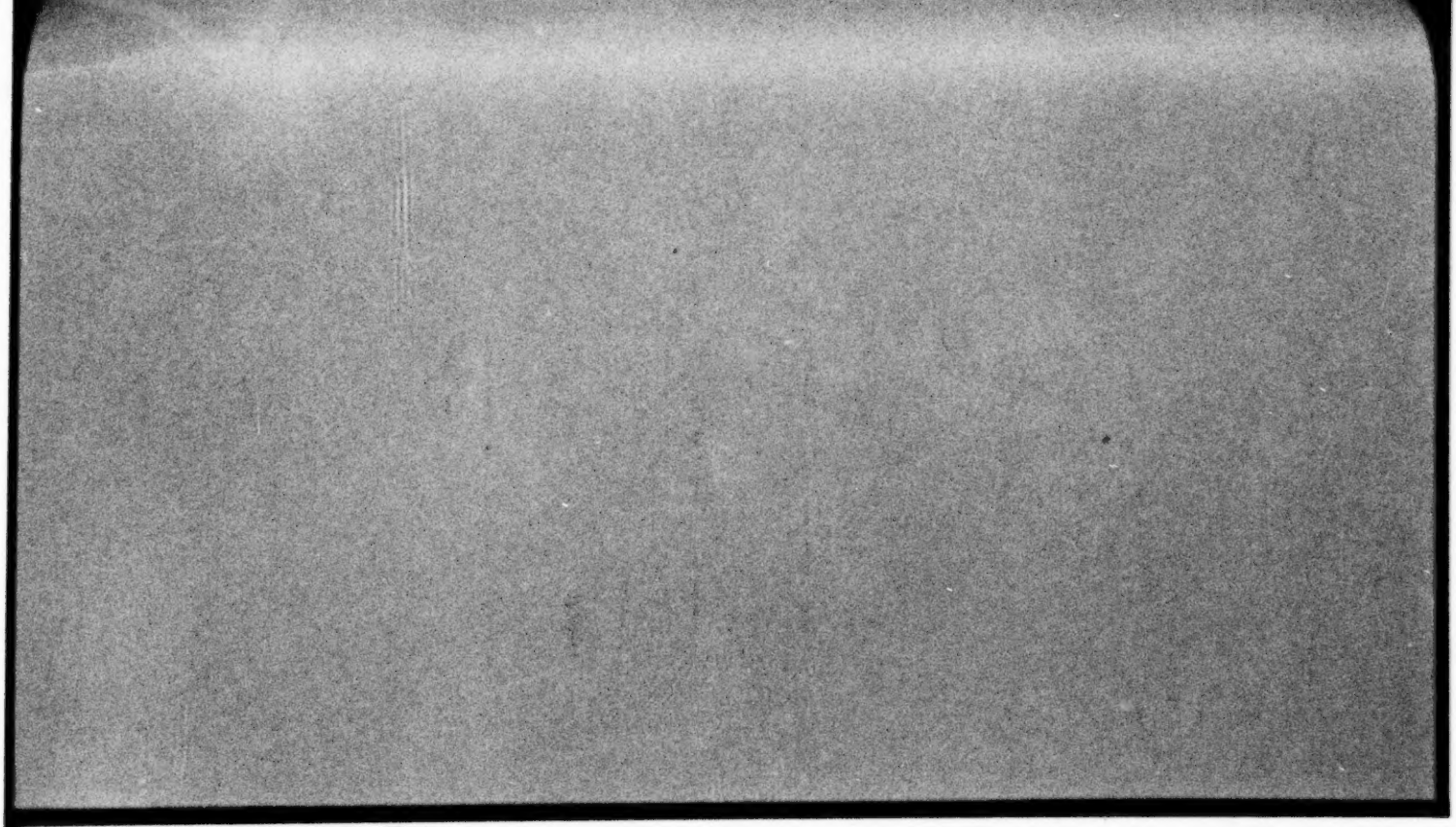

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IN THE

Supreme Court of the United States.

OCTOBER TERM, 1927.

UNITED FUEL GAS COMPANY, Appellant, vs. THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, *et al.*	No. 79.

REPLY BRIEF FOR APPELLANT.

The outstanding feature of the briefs filed on behalf of the Public Service Commission of West Virginia and the intervening appellees is a reversal of the accepted method of approach to a discussion of rates alleged to be confiscatory. As we understand the accepted practice, it consists in ascertaining, first, the rate base, second, the proper rate of return, and third, the determination of confiscation *vel non* by a comparison between the actual earnings and the earnings which would arise on applying the proper rate to the true rate base. The appellees, however, prefer to consider, first, the actual earnings plus what they are pleased to call certain readjustments; and having thus reached a putative revenue, they capitalize this sum at 8% in order to determine the maximum rate base. Having thus produced a capitalized figure in excess of any amount claimed on behalf of the appellants, they assert that the question of confiscation is thereby finally laid to rest, with the result that the crucial questions in relation to the true value of the appellant's property are reduced to a subordinate, indeed to a wholly irrelevant, posi-

tion. It is clear that this conclusion is solely dependent upon the amount of earnings the appellees are permitted to assume. Just how the appellees reconcile this method of reasoning with their vigorous insistence that the value of a rate base in rate making cases cannot be determined by its regulated return or earning power in the public service field is not made to appear.

Meeting the appellees, however, on their own ground, it is the purpose of this reply brief to point out various unwarranted adjustments and computations made by the appellees in reference to alleged earnings and certain fallacies of their discussion in regard to the value of the appellant's gas lands.

I.

Earnings.

(a) *Appellees have erroneously calculated amortization and depreciation on cost, whereas it should be computed on fair value.*

An amortization fund is for the purpose of returning to the stockholders of the Company the value of their property when it is consumed in the public service. A large part of the value of appellant's property is made up of gas in the ground. The remainder consists of the plant constructed for the purpose of producing this gas and transporting it to the consumer. If, because of enhanced values of the various properties going to make up the plant used for producing the gas and transporting it, it is worth more now than it was when it was constructed, we can conceive of no reason why it should not be paid for at its value at the time the payments are made. While it is the same property, it is true, still, as the witnesses have stated, the difference in value is not because of the difference in the property, but the difference in the purchasing power of the dollar. If the purchas-

ing power of the dollar has decreased as compared with the time at which the plant was constructed, and the value of the plant measured in dollars has correspondingly advanced, then when the stockholders are paid the money from time to time to take the place of the plant or to compensate them for the consumption of the plant in performing its work, they should be paid a sufficient amount over what the plant cost when it was installed to make the money which they get of the same value as the money they put into the plant. This same thing is true as to the gas that is used, but in much larger measure. The gas territory was acquired when the possibilities were unknown, and, of course, after millions of dollars have been spent in demonstrating that this territory is valuable gas-producing territory, it is worth much more than it was before this expenditure was made, independent of any deflation of the currency, and the stockholders of the Company are entitled to have back the value of the gas at the time it is taken and paid for and not merely what was paid for the territory before it was known that it would be productive of natural gas.

Also, since natural gas consumed, lost or wasted is non replaceable, the value of what is left necessarily increases as the potential supply diminishes. The margin of efficiency and economy of natural gas over other fuels is so wide as to make it certain that the available supply of the former will all eventually find a market (R., 227-9; 288; 296; 305-6). As observed by the Court in *Matter of Pennsylvania Gas Company* v. *Public Service Commission*, 211 App. Div. (N. Y.) 253, 207 N. Y. Supp. 599 (211 App. Div. at p. 261):

> "Moreover, if there is a progressively diminishing supply of natural gas in the Pennsylvania fields generally, it is difficult to see why that should not tend to enhance the value of such supply of gas as remained in the petitioner's gas fields, under the economic law of supply and demand."

As authority supporting the proposition that allowance for amortization and depreciation must be calculated on

present fair value rather than on original cost we call attention again to the decision of the Supreme Court of Michigan in *Michigan Public Utilities Commission* v. *Michigan State Telephone Co.*, 228 Mich. 658, 200 N. W. 749. That was a mandamus application brought for the purpose of compelling the Telephone Company to observe a rate prescribed by the Public Utilities Commission of Michigan. The Telephone Company responded that it ought not to be required to observe the rate because the same was confiscatory, and asserted in support of this contention, among other reasons, that allowances for depreciation and amortization were made upon the book or investment costs instead of upon present fair value. The court, in discussing this question, said (228 Mich., at p. 672):

> "Computing depreciation (although perhaps convenient to accountants and bookkeepers), on investment cost, or book cost, as distinguished from present fair value, must be rejected. If the rate base is present fair value, then the depreciation base as to depreciable property is the same thing. There is no principle to sustain a holding that a utility may earn on the present fair value of its property devoted to public service, but that it must accept and the public must pay depreciation on book cost or investment cost, regardless of present fair value. We repeat, the purpose of permitting a depreciation charge is to compensate the utility for property consumed in service, and the duty of the commission, guided by experience in rate making, is to spread this charge fairly over the years of the life of the property."

This decision accords entirely with the decisions of this Court as to the basis on which the fair return allowed a public utility must be computed. These decisions, cited in our main brief, (pp. 31-3), clearly state the rule that the compensation to which the owner of property is entitled when the same is taken for a public service is its fair value at the time

of its taking or use. This is as applicable to the return allowed for the current use of the property as it is for the return allowed for its consumption in use. The attempt of the appellees to set up a different standard for the latter than for the former is inconsistent with the principles established by these decisions. Stated in another way, their contention is no more than this: That while the appellees are using the property they must pay a reasonable return on its present fair value, but when they buy it and pay the installments of the purchase money, they need only pay the actual cost, no matter when the property was purchased. This cannot be the law.

Appellees in their briefs have cited a number of public service commission decisions which they claim establish the different standard which they advocate. However, without attempting to analyze the complicated facts of these commission decisions, it can be said that, in general, they do not establish the principle sought, and in cases where they do discuss the question and decide that amortization or depreciation should be computed on investment cost rather than on fair value, they are erroneous. There are certainly as many commission decisions holding that amortization and depreciation should be computed on fair value: See

Re Osage & Oklahoma Co. (Okla. 1917) P. U. R. 1917D 426;

Re Monarch Gas Co. (Ind. 1920) P. U. R. 1920C 960;

Re Republic Light, Heat & Power Co. Inc. (New York 1921) P. U. R. 1921C 795;

Re Hope Natural Gas Company (W. Va. 1921) P. U. R. 1921E 418;

Re Baker Natural Gas Utility (Montana 1921) P. U. R. 1921E 609;

Billings v. Billings Gas Company (Montana 1924) P. U. R. 1924C 217;

Re West Virginia Central Gas Co. (W. Va. 1924) P. U. R. 1924E 24;

Municipal Gas Co. v. City of Sherman (Texas 1925) P. U. R. 1925E 67;

MacThucaite Oil & Gas Co. v. City of Ada (Oklahoma 1927) P. U. R. 1927D 833.

This erroneous contention on which intervenors' brief proceeds of course renders its tabulations of earnings valueless, as it does its computation based thereon of the value of the Company's property.

Before leaving the question of amortization, we refer briefly to the view apparently taken in certain parts of intervenors' brief to the effect that there is only $20,981,232.11 of property to be amortized, arriving at this conclusion by the same process adopted by Commissioner Stathers, that is, by deducting from the amount found as the fair value of the property the amount of the amortization reserve of approximately $14,028,737.03 already accrued (R., 123). It is clear under the authorities that an accrued depreciation or amortization reserve is to be considered as the property of the stockholders and is not to be deducted in arriving at the rate base.

Kings County Lighting Co. v. Prendergast, 7 Fed. (2nd) 192, 202;

N. Y. Telephone Co. v. Prendergast, 300 Fed. 822 at 824, 825;

Monroe Gas Light & Fuel Co. v. Michigan Public Utilities Commission, 292 Fed. 139 at 146, 147;

Michigan Public Utilities Commission v. Michigan State Telephone Co., 228 Mich. 658, 668;

City of Elkins v. Public Service Commission, 102 W. Va. 450, 135 S. E. 297, 298.

Another controlling reason why this accrued depreciation reserve should not be deducted from the present fair value of the property in determining the amount remaining to be

amortized, is that this amount has already been consumed in deterioration of the property and in the gas already used. Mr. Hagenah finds the total value of the property, exclusive of going concern value, after applying his method of depreciation, to be $31,692,100.00.
He finds the value of the property new to be 43,114,072.00.
In each of these items he includes 6,732,920.00
for leaseholds and gas rights. If we deduct this last amount, we would have, according to Mr. Hagenah's statement, a value of the physical property new of 36,381,152.00
and a present deteriorated value, in accordance with his theory, of 24,959,180.00.
This appears from his table at pages 1166 67-68 of the record. From this it appears that the physical properties are worth $11,421,972.00 less than when they were new. The only way that this amount is returned or has been returned to the stockholders is by this depreciation reserve of $14,028,737.03. In addition to this, during the time this depreciation reserve was accumulating, there were delivered large quantities of natural gas. The value of this gas far more than makes up the difference between the $11,421,000.00 deterioration of the physical plant and the $14,028,737.03 reserve accrued. It will thus be seen that this accrued reserve has already been fully earned in the deteriorated value of the plant and in the gas delivered.

(b) *Appellees have erroneously added back into the earnings statement delay rentals on leaseholds, whereas this expenditure is for the protection of the property and should be allowed in operating expense.*

In their statement of the net earnings of the regulated part of the West Virginia business (Intervenors' brief, p. 173) appellees add back into income the sum of $147,945 as "delay rentals and leasehold expense," which had been deducted as one of the charges to operating income. This is erroneous.

These charges are uniformly made by natural gas companies to operating expense, and with reason, since they take the place during the period before development of the well rental which becomes payable upon development to the owner of the fee. The West Virginia Commission's regulations (classification of account) require them to be treated as an operating expense. These well rentals after development are always a charge to operating expense, and the delay rental which is in force during the period before development commences is its equivalent during this period and is just as much an operating expense. It is for the protection and preservation of the property and a part of the cost of furnishing the gas, and there is no justification for adding this amount back into income account.

(c) *Appellees have erroneously made additions to earnings because of sales of gas to affiliated companies.*

Intervenors' brief is confusing in that it argues sometimes from the basis of the Company's entire property, whether or not used in the public service, and the earnings accruing therefrom, and sometimes from the portion thereof in West Virginia used in the public service and the earnings accruing therefrom. Of course the latter is the only correct basis on which this case should be decided, and is the basis on which the table on page 173 of intervenors' brief is set up.

Nevertheless, in other parts of their brief, in their attempt to increase the earnings of appellant, the intervening appellees have insisted that there should be added to such earnings certain amounts because of the sale of gas to the parent companies at an average price of a little more than 7 cents. In their brief, at page 5, they show the result of increasing this price to the average price paid by other wholesale purchasing companies, which was about 19.45 cents.

In the table, at page 8, they use the figure $2,143,661.46 for 1923, and estimate that this difference should be $2,400,000.00 for 1924. The former figure is again used as

the basis of Commissioner Stathers' calculations at page 37 of the brief. The calculations made at page 39 of the brief are on the basis of raising the price of the gas sold to the parent companies to the city gate rate as found by Jirgal. This results in an increase in earnings of $1,495,496.69. This is based on the assumption that 4½ cents per thousand cubic feet is the cost of distribution, and the table at page 43 attempts to establish this at 4.6 cents instead of 4½ cents.

Appellant's contention is, of course, that there is no reason in this case for any theoretical adjustments of this character. This contention would seem to be firmly established by the cases of *Northern Pacific Railway Co.* v. *North Dakota*, 236 U. S. 585 and *Norfolk & Western Railway Co.* v. *Conley*, 236 U. S. 605, in the first of which a rate on coal was condemned and in the second a two cent passenger rate enjoined because each of these separate businesses must support themselves and not rely on the other business to make up a loss. Certainly, if a railroad company could not be required to supplement inadequate passenger rates by excess earnings on freight business, as was true in the *Norfolk & Western Railway Co.* case, or inadequate earnings from coal by excess earnings on other freights, as was true in the *North Dakota* case, for a very much stronger reason the appellant here cannot be required to supplement inadequate earnings from its public service business by profits made in its purely private business. In the two railroad cases all of the earnings were of a public character—that accrued to the railway companies from their business as common carriers, but still the court held that each class of the business must yield a fair return for the service performed. Certainly if this be true in the case of these railroads, then the appellant here is entitled to have a fair return on its public service business regardless of whether it makes excessive profits in other private business or not.

See also *Chicago, Milwaukee & St. Paul Railway Co.* v. *Public Utilities Commission, etc.*, 274 U. S. 344, 350-1.

Actual figures are available for the West Virginia public service business, and they are set up in our brief. As to the property to be assigned or allocated to the West Virginia public service business, the engineers are in agreement, and the figures are actual amounts and not the result of theoretical adjustments. The property in the production system is divided upon the basis of the gas consumed in the respective classes of business; that in the transmission system upon the basis of the demand mileage; and that in the distribution system upon the actual property used for that purpose. The expenses are divided upon a basis agreed upon by the parties, and we earnestly insist that there is no reason for attempting to test the West Virginia public service rate by earnings from business outside of West Virginia and not in anywise connected with the public service business in that State.

However, even though we assume that the whole property of the Company must be taken into consideration in testing the West Virginia rate, we respectfully submit that a test such as that made by Mr. Jirgal and by the Commission is worth nothing, for the reason that wherever it was found that gas was sold for less than the West Virginia rate the earnings were adjusted upward, but where sales were made for more than the West Virginia rate they were not adjusted downward. The only fair way to test the West Virginia rate by the whole amount of business done by the Company would be to ascertain whether, if all of the gas handled by the appellant was sold at the West Virginia rate, it would produce a fair return upon the investment. On page 1065 of the printed record, Mr. Jirgal finds that 4.5 cents is the actual cost of distribution, and that 20.27 cents is the average public service rate in West Virginia, leaving 15.77 cents as the proper gate rate; that is to say, the rate at which the gas should be calculated before being delivered to a distribution system. These calculations, it must be borne in mind, are based upon book cost of the property and not upon fair value. If based upon present values, they would be much

more. But let us even apply these figures to the total amount of gas sold by the Company during the year 1923; to wit, 46,495,459,000 cubic feet (Rec., 1134), and we would have $7,332,336.88 as the amount which would have been received for the gas had it all been sold at a rate comparable to the West Virginia rate. Of this amount of gas there was sold at retail 16,429,288,000 cubic feet. If Mr. Jirgal's distribution rate of 4½ cents be applied to this, we would have $739,317.96 which should have been received for distributing such of the gas as was actually distributed to customers, assuming that it was all distributed at the West Virginia rate. Adding this to the above figure, it will be found that the total amount which would have been received for the gas had it all been sold on a rate commensurate with the West Virginia public service rate, would be $8,071,651.84. This would represent the gross proceeds of all of the gas handled by the Company had it been sold at the West Virginia public service rate. Instead of arriving at this conclusion, Mr. Jirgal, by adjusting upward all of the gas that was sold at a lower figure than the West Virginia rate and making no adjustment for that which was sold at a higher figure, reaches a total gross earning of $9,873,837.86. The result of this, even assuming Mr. Jirgal's distribution cost to be correct, would be to reduce his gross earnings by $1,802,186.02. This calculation, as before stated, is based on the assumption that 4½ cents is a fair distribution rate. This, however, is not the case. This rate results, as before stated, from incorrect calculations. In arriving at this rate, Mr. Jirgal takes the book cost of the property instead of the present fair value. He does not include any part of the general expenses in the distribution expense. He does not include any taxes or similar charges in distribution expense. Mr. Uebelacker, on the other hand, has worked out a distribution cost including all of these items, and upon the basis of the fair value of the property as found by himself and Mr. Hagenah. This is found at page 568 of the record.

Mr. Uelselacker's figure for cost of distribution, based upon a return upon the present value of the property, is 6.825 cents. In this calculation there is no allowance for going concern value (for which Jirgal allows), which, if it was included, would make this rate more than 7 cents. If we deduct 7 cents as the fair distribution cost from the average price of 20.27 cents received in the West Virginia public service, we would have an actual gate rate upon this basis, which takes into consideration all items of expense and takes the property at its present fair value instead of book cost, of 13.27 cents.

Applying this to the total amount of gas handled during the year; viz., 46,495,459,000 cubic feet, we would have $6,169,947.41 which would have been received for this gas had it all been sold at the West Virginia gate rate. If we then apply to the 16,429,288,000 cubic feet sold in the entire public service, the West Virginia distribution rate of 7 cents, we would have $1,150,050.16, which would have been received for this gas in addition to the gate rate, which added to the amount which would have been received as the gate rate above, makes a total of $7,319,997.57 which would have been received for all of the gas handled by the appellant had it all been sold at the West Virginia rate, or $2,553,840.29 less than Mr. Jirgal's adjusted gross earnings.

The theory of the intervenors and their witnesses Hagenah and Jirgal and of the Commission seems to be that the intervenors are the owners of the property and that the appellant is simply their agent operating the same, and that any profit which is made in business carried on outside of the State of West Virginia and with other consumers of natural gas, should inure to the benefit of the West Virginia public serv-

ice consumers, while the appellant contends that it is the owner of the property and that the appellees are not concerned with how much money it makes or how much it loses on other business, but are only concerned with whether or not they are required to pay more than a fair rate for the service rendered them.

We have given the foregoing discussion of appellees' endeavor to increase earnings by adding sales of gas to parent companies, pointing out their errors, although we reiterate that these sales to private customers, not connected with the public utility business of West Virginia, should not be considered in this proceeding at all, but only the earnings from the regulated, public service end of the West Virginia business.

(d) *Appellees' Contention as to Res Judicata.*

Appellees take the position that the so-called adjustments of sales of gas by appellant to its parent companies and of the earnings from the gasoline extraction privilege were *res judicata* by virtue of the decision of the Supreme Court of Appeals of West Virginia in *Charleston* vs. *Public Service Commission*, 95 W. Va., 91, 120 S. E. 398 (Brief of intervening appellees, p. 30; Brief of Public Service Commission, pp. 34, 36). The intervening appellees cite:

New York & Richmond Gas Co. v. *Prendergast*, 10 Fed. 2nd, 167, 208;
City of New Orleans vs. *Citizens Bank of Louisiana*, 167 U. S., 371;
Guffey vs. *Smith*, 237 U. S., 101.

These authorities do not support appellees' contention.

The Court's opinion in the *New York & Richmond Gas Company* case merely holds that a valuation as of a certain date determined by a judgment in a prior action in the State Court was conclusive as to the *value of plaintiff's property*

on that date upon the successors in office of the defendants in the prior action. *New Orleans* vs. *Citizens Bank* involved an exemption from taxation, and this Court held that the parties were estopped by the judgments in two prior actions between the same parties directly upon the point. *Guffey* vs. *Smith* merely reiterates the doctrine that decisions of the highest courts of a State in which the property is situated are accepted and applied by the Federal courts as rules of property. This, it may be said in passing, is the very principle for which appellants are contending, both in this case and in No. 19, set for argument at the same time as this (p. 20, post). The decision of the Supreme Court of West Virginia in the *City of Charleston* case as to these so-called adjustments cannot possibly relate to anything beyond the state of facts disclosed by the record then before it. It is at most an adjudication that the so-called adjustments were, in the opinion of the Court, proper to be made as of the time to which the figures had been brought down. It is absurd to claim that this decision concluded appellant for all time as to the manner in which its earnings should be computed for rate-making purposes.

II.

Appellant's Gas Lands, Leases and Rights.

(a) *Appellee's Criticism of Appellant's Evidence.*

In view of the decisions of this Court and of the Supreme Court of Appeals of West Virginia, appellees are unable to contend seriously that the appreciated value of appellant's so-called gas reserves, if proven, should not properly be included in the rate base. They are obliged to content themselves, therefore, with criticising the various methods by which appellant has endeavored to prove this value.

As pointed out in appellant's main brief (p. 30) appellant has supported in three ways its contention that the various

valuations of its gas reserves reached by the majority of the Public Service Commission and by the Court below are grossly inadequate. These ways are (1) proof of the actual value of the gas in the ground based upon the calculations of an expert geologist and engineer in the most minute detail after a most thorough and painstaking examination of the properties and study of production and transmission costs and market conditions; (2) by uncontroverted evidence as to the actual price paid for natural gas in a number of contracts between parties contracting at arm's length; and (3) by the opinion evidence of practical men of the highest standing and widest experience in the business, predicated not only upon their general knowledge of the latter, but also upon their special knowledge of the very properties involved, including the nature of appellant's interest in them. All of these methods result in a value of over $30,000,000 for appellant's gas properties, or nearly three times that assigned to them by the Court below. Appellant has asserted in its main brief and still maintains that all of this evidence is reliable and uncontradicted. Appellees attack all of these methods as "estimates" and "speculative" and contend that therefore no effect whatever is to be given this evidence.

It is, of course, conceded that it is an impossibility to compute with absolute accuracy the number of cubic feet of gas ultimately derivable from the sub-surface of several hundred thousand acres of land. Neither is it possible to prophesy with certainty the market conditions which will prevail over the period necessary to extract and sell this gas. Even assuming for the sake of argument that, as charged by appellees, the estimates of appellant's witnesses Davis and Uebelacker are "mere estimates and nothing more," that is, nevertheless, no reason for disregarding them entirely in the absence of any better or surer method of valuation, and appellees have not shown that there is any better or more accurate method. Appellant still maintains that its testimony as to the value of these leaseholds is uncontra-

dicted. Appellees, at page 156 of their brief, deny this, but in support of their denial merely adduce reports and calculations of other experts which, it is submitted, are far more speculative than those of appellant's witnesses can possibly be accused of being. We beg leave to remind the Court of the check which Mr. Davis made upon his computation of the gas content by comparing it with the actual production, and of how remarkably this sustained his computation (Appellant's brief, p. 19, R., 734).

Appellees' theory, briefly summarized, is that because the value of appellant's gas reserves is not susceptible of demonstration by mathematical proof, but must necessarily be established by estimates, no weight whatever is to be given to its evidence on this point, no matter how painstaking the collection of the data upon which such estimates are based, or how well qualified its witnesses are to make them. This position, of course, cannot be supported. If precise mathematical proof of value is unobtainable, Public Service Commissions and Courts cannot, while conceding that property has value, refuse to credit it with any value whatever. They must adopt the best methods available of arriving at such value, even if these depend upon estimates or are matters of opinion.

As this Court has very recently said, in *United States* vs. *Ludey*, 274 U. S., 295, 302, referring to the difficulty of calculating depletion under the income tax provisions of the Revenue laws:

> "The fact that the reserve is hidden from sight presents difficulties in making an estimate of the amount of the deposits. The actual quantity can rarely be measured. *It must be approximated.* And because the quantity originally in the reserve is not actually known, the percentage of the whole withdrawn in any year, and hence the appropriate depletion charge, is necessarily a rough estimate. But Congress concluded, in the light of experience, that *it was better to act upon a rough estimate than to ignore the fact of depletion.*" (Italics appellant's.)

It is submitted that appellant has presented the best and only approved methods known of arriving at a just valuation of its gas properties that have yet been discovered, and certainly appellees have failed to show that better ones exist. They have attempted to suggest some at pages 159, *et seq.* of intervenors' brief, but their suggestions are arbitrary, have no sanction in business usage, and we do not think that any of them will appeal to this Court as convincing.

They begin with a suggested method of ascertaining the present day bonus cost of reproduction of the leases. This absolutely begs the question. There is no evidence whatever in the Record that the present holdings of the appellant could be reproduced. Indeed, in the very nature of things reproduction would be impossible. It is upon a careful examination of appellant's unique holdings, and upon nothing else, that the testimony of appellant's experts is based. The value claimed by appellant arises in great part from the peculiar nature and situation of these holdings, and all the testimony is to the effect that this peculiar value results from the fact that it is impossible to reproduce them. As appellant's witness Wyer testified in the Kentucky case (No. 19, R., 456), its natural gas property is "the most valuable in the world". See also the testimony of appellant's witnesses Sullivan (R., 282), Corrin (R., 287) and Gregory (R., 300) in this case.

The second suggested method is apparently based upon Judge Rose's "speculation" (R., 1265) as to whether the situation is affected by the fact that the appellant owns the gas it supplies instead of purchasing it from somebody else. It is not apparent how the consumer would benefit by the introduction of another middleman between the producer and himself. The distributor's price would necessarily be based upon what it had to pay for the gas, and the fair value of the producer's property would necessarily enter into the latter. The only effect of this suggested method is to re-

move the question of appreciated value one step further away. Also, there is no evidence that appellant will be able to purchase indefinitely such gas as it needs, in view of the decreasing quantity in existence.

Appellees' third suggestion is that if it be considered that the fair market value of gas in the ground has been established, only the value of the gas in the proven acreage can be included in the rate base. It endeavors to support this proposition by reference to the fact that the regulations of the Bureau of Internal Revenue take only proven territory into account for the purpose of computing depletion. Again, we fail to see what this has to do with the question. In imposing an income tax, Congress was under no obligation to concede to the taxpayer any allowance for depletion whatever, but might, if it had seen fit, have assessed oil and gas producers upon their full annual output.

The fourth suggestion relates to the portion of the gas reserve to be considered as presently used and useful in the public service. As pointed out in appellant's main brief (p. 37) this question was raised for the first time by the District Court in this case. We consider that appellees' argument on this head has been sufficiently anticipated, but the question is of such importance that a few additional remarks thereon may be permissible.

At page 164 of their brief, the intervening appellees quote the inquiry of their witness Hagenah (R. 446) as to what the public gains by the Company's buying this gas land if the result to it is to be as he assumes. There are two answers to this: (1) it is assured for a longer period of its supply of gas *from the same purveyor* (as, indeed, the witness admits); and (2) it would have to pay the appreciated value at any rate because the distributor would have to pay more for the gas as the supply diminished. The producer's price would, of course, include amortization of his gas supply and plant as well as its carrying charges. The alternative would be that the appellant would be forced out of business

and consumers obliged to deal with a new distributor whose costs would necessarily be enhanced either by the installation of a new system or by what it had to pay for the old one.

It is conceded by everybody that the supply of natural gas is limited, and that that which is consumed can never be replaced, so long, at least, as this planet is inhabited by the present race of human beings. Only a new creative cycle can repeat the slow geologic processes by which the gas was produced. Is it not, then, self evident that as the quantity of natural gas under ground, whatever that may be, diminishes, the value of the remainder will appreciate? It necessarily follows that the acquisition of large reserves now will lessen the cost to consumers later.

If appellant pursued the policy of merely keeping a few years' supply on hand, it would obviously have to pay higher and higher prices to maintain that reserve as time went on. This would be true, whether it acquired additional lands or leases (assuming that there were any left to acquire), or purchased from others whose costs and profits would necessarily enter into the price it would have to pay.

In its original brief, appellant cited in support of its contention that all its gas properties are presently used and useful in the public service (pp. 38-9) *Southern Bell Telephone Co.* vs. *R. R. Commission of South Carolina*, 5 Fed. (2nd) 77. The same question was before another United States District Court of three judges in *Pacific Teleph. & Tely. Co.* vs. *Whitcomb*, 12 Fed. (2nd), 279, and was decided the same way. The Court said (p. 288):

> "Public service companies cannot wait until their facilities break down or prove unequal to the demands upon them before making needful additions and improvements. Business judgment must be employed to anticipate reasonable future needs and to make provision for them in advance. This is essentially a matter of business management which may not be arbitrarily interfered with. There is nothing in the outlay to suggest dishonest, wasteful, or imprudent expenditure. The

right of a public utility corporation honestly and in good faith to carry on its business and direct its affairs must not be wrested from it under the guise of rate making. In the absence of evidence to the contrary, investments may reasonably be assumed to have been made in the exercise of reasonable judgment. Missouri ex rel. v. Public Service Commission, supra. See, also, Northwestern Bell Telephone Co. v. Spillman (D. C.) 6 F. (2d) 663."

(b) *Value of Gas Leaseholds as Such.*

The intervening appellees (at pp. 95-8) bring up again the point so elaborately discussed by Commissioner Stathers (R. 107, *et seq.*) that most of appellant's so-called gas reserves consist merely of the right, under its so-called leases, to prospect for gas and drill wells which, according to him, vest no title to the gas in the lessee until it is actually extracted. We have already pointed out (1) that the rights of the lessee under such instruments have been repeatedly held by this Court to be property—valuable property—irrespective of the question of title to the product, and (2) that the witnesses in the gas business, who testified to the value of appellant's holdings, had this precise condition in mind. Supplementing this, the Supreme Court of Appeals of West Virginia has on October 18, 1927, since our original brief was prepared, in the case of *Hall* vs. *Douglas*, expressly decided that although title conferred by an oil and gas lease is inchoate until the oil or gas is found, the lessee has, nevertheless, *by virtue of the lease alone*, a property right which is subject to taxation and for which payment must be made if the land is partitioned by sale. The opinion in this case not yet having been reported, we append it hereto.

And the United States District Court for the Eastern District of Kentucky has held that the law of that State, under the decisions of its Supreme Court, is that the grantee in an oil lease acquires ownership of the oil in the land. *Eastern Gulf Oil Co.* vs. *Kentucky State Tax Commission*, 17 Fed. (2nd) 394, 396 (citing such decisions).

(c) *Market for Appellant's Gas.*

At page 148, of their brief intervening appellees attack Mr. Uebelacker's estimated Pittsburgh price on the ground that it does not take into account the result of dumping into that market 40,000,000,000 cubic feet of gas annually. This is met by the testimony of Mr. Gregory (R., 296) that the industrial market available to his Company could be tripled if an adequate supply could be guaranteed. Judge Rose, in the Court below (R., 1266) calls attention to the fact that under the decision of this Court in *Pennsylvania* vs. *West Virginia*, (262 U. S., 553, 559) appellant cannot be forced to sell its gas in West Virginia if it can get a higher price elsewhere. If this is true—and as we have pointed out, the Record abundantly shows that appellant can readily market its entire product outside of West Virginia at much higher rates than it receives from its domestic consumers in that State—how can it be compelled to forego this profit for the benefit of the latter? It is pertinent in this connection to recall the fact that when appellant made its principal investment in West Virginia in 1909, the sale of natural gas was not the subject of public regulation in that State, nor was such the fact until 1913. Until the latter year, producers of and dealers in natural gas were absolutely free to charge as much for the commodity in which they dealt as those desiring it were willing to pay, and sound business policy justified their charging. Intervening appellees' brief (p. 158) refers to appellant's property as having been "dedicated" to the public use. It has not been dedicated. It has been commandeered.

The intervening appellees, at page 106 of their brief, attempt to make the further point that no nearby market has been pointed out "capable of absorbing plaintiff's gas in the quantities now being produced. *No gas purchasing company is suggested other than Public Utilities subject to Public Service regulation.*" (Italics appellees'.) At page 153 they at-

tempt to support this contention by citation from *Natural Gas Company of West Virginia* vs. *Public Service Commission*, 95 W. Va., 557, 568.

The statement quoted above is amazing in view of the Record in the instant case. (Testimony of Sullivan, R., 282; Corrin, R., 288; Gregory, R., 295 6; Meals, R., 305.) The testimony of these witnesses taken together demonstrates beyond peradventure that there is a very large market in neighboring States free from any Public Service regulation whatsoever which would readily absorb a vastly greater quantity of gas than appellant will in all probability ever be able to supply. Mr. Gregory even went so far as to testify that he himself would be willing to pay for an option on the property if it were for sale in the certainty that he could finance the transaction (R., 295).

III.

Additional Capital Investment in Physical Property.

At pages 84 and 85 of their brief intervening appellees discuss the question of *incomplete construction*, and argue that the Commission erred in including this item on the theory that they were considering the conditions existing in 1923. This view loses sight of the fact that rates are made for the future and not for the past. The rate prescribed by the commission was for 1925 and subsequent years as its order was not entered until March, 1925. Upon what principle, therefore, should property added in 1924 and which was being used according to the evidence be excluded from consideration in establishing a rate in the spring of 1925? As observed by this court in *McCardle* v. *Indianapolis Water Co.*, 272 U. S. 400, 408: "In every confiscation case, the future as well as the present must be regarded. It must be

determined whether the rates complained of are yielding and will yield, over and above the amounts required to pay taxes and proper operating charges, a sum sufficient to constitute just compensation for the use of the property employed to furnish the service; that is, a reasonable rate of return on the value of the property at the time of the investigation and for a reasonable time in the immediate future."

Respectfully submitted,

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APPENDIX.

No. 6021

R. C. Hall

vs.

L. A. Douglas,
United Fuel Gas Co. *et al.*

Roane County — Reversed in part, and Remanded.

Litz, Judge.

(Syllabus.)

The lessee of a cotenant of mineral estate in land is entitled to be paid for the value of his lease out of the proceeds assigned to his lessor, upon partition of the minerals by sale.

Litz, Judge:

This suit was instituted for partition of 11½ acres of oil and gas land, situated in Roane County, and owned by the parties as follows: ½ of the mineral and surface by the plaintiff, R. C. Hall; ½ of the surface by the defendant, L. E. Garrett; and ½ of the mineral by the defendants L. A. Douglas, R. R. Douglas, Ufa Douglas, Hallie Douglas Adams, Ethel Townsend, Vera McKown, J. B. Vineyard and Flora Vineyard, subject to a lease for oil and gas to the defendant United Fuel Gas Company. The answer of the United Fuel Gas Company avers that it will cost more than the value of the gas to drill a well on the land; that "the only way in which the rights of the parties in the oil and gas and other minerals thereunder can be preserved is to sell the same and divide the proceeds"; and prays in the alternative for dismissal of the bill or sale of the minerals and distribution of the proceeds among the parties in interest.

By decree of June 27th, 1925, the circuit court "adjudged, ordered and decreed that the surface only of said land can be partitioned in this suit". This Court upon a former appeal affirmed that decree, in so far as it directed the partition in kind of the surface only, and remanded the cause for sale of the oil and gas and distribution of the proceeds among the parties in interest. *Hall* v. *Douglas*, 102 W. Va. 400. Thereafter, by decree of January 18th, 1927, the circuit court directed a sale of the oil and gas and distribution of the proceeds; and pursuant to said decree the oil and gas were sold, May 7th, 1927, to L. G. Davis for $9,500.00. May 23rd, 1927, the United Fuel Gas Company filed a petition alleging that on July 30th, 1926, it drilled a producing gas well upon a tract of 150¾ acres of land, embraced in its lease of the 1½ acres; and praying in the alternative, that the sale be set aside and the interest of the petitioner in ½ of the oil and gas underlying the 1½ acres be determined before ordering another sale, or that "if the court is of the opinion that it can determine the interests of the parties herein without setting aside said sale and said decree, that then, before said fund is distributed, it first ascertain and determine the interest of this petitioner in said fund, and in any decree distributing the same direct that such part of said fund be paid to it as will correspond to its interest in said land under said lease". A decree was entered May 28th, 1927, confirming the sale and denying the United Fuel Gas Company the right to participate in the proceeds. Appealing from that decree, the United Fuel Gas Company assigns the following as grounds of error:

(1) The entry of the decree of sale before determining the interests of the parties in the oil and gas, and the absence of proof that the interests of all the parties would be thereby promoted.

(2) The denial to the plaintiff of the right to participate in the proceeds of sale, and the directing of payment of one-half thereof to J. P. Young, a stranger to the suit.

The decree involved in the former appeal specifically determined the interests of the parties in the oil and gas, as well as the surface of the 1½ acres of land. The appellant, having averred in his answer that the only way in which the rights of the parties in the oil and gas could be preserved was by sale and division of the proceeds, is not in position to question the propriety of the sale; nor is it prejudiced by the decree complained of, in so far as payment of one-half of the proceeds of sale is directed to J. P. Young, as assignee of the plaintiff R. C. Hall. The appellant, however, is prejudiced by the decree denying it the right to participate in the proceeds from the sale of the interest in the oil and gas belonging to the defendants L. A. Douglas, R. R. Douglas, Ufa Douglas, Hallie Douglas Adams, Ethel Townsend, Vera McKown, J. B. Vineyard and Flora Vineyard, and the decree, appealed from, to this extent will be reversed, and the cause remanded for the purpose of ascertaining the value of its lease, and of directing payment thereof from the proceeds derived from the sale of the interest of said defendants. Although title conferred by an oil and gas lease is inchoate until the oil or gas is found, the lessee has, nevertheless, by virtue of the lease alone, a property right which is subject to taxation in this state.

Reversed and remanded.

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1928.

No. 4.

UNITED FUEL GAS COMPANY

v.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, *et al.*

APPELLANT'S REPLY BRIEF TO APPELLEES' SUPPLEMENTAL BRIEF.

JOHN W. DAVIS,
HAROLD A. RITZ,
DOUGLAS M. MOFFAT,
EDWARD L. PATTERSON,
Counsel for Appellants.

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IN THE

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UNITED FUEL GAS COMPANY

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PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, *et al.*

No. 4.

APPELLANT'S BRIEF IN REPLY TO APPELLEES' SUPPLEMENTAL BRIEF.

Upon the hearing of this case on the 15th inst. Appellees filed a supplemental brief. At the close of the argument on the 16th, the Court gave leave to Appellant to reply to this supplemental brief if it desired to do so within one week and, in view of the fact that the supplemental brief presents some of the propositions involved in a different way from that which was heretofore presented, we have taken advantage of the leave granted by the court to reply thereto.

Proper Rate of Amortization.

Protestants make the same argument, directly or inferentially, which they made in their principal brief, that only a part of the plaintiff's gas reserves are to be taken into the rate base. Whether this part is limited to the so-called proven territory, for the reason that proof as to the remaining territory is considered too speculative, or whether, as the Court below decided, the part should be limited to that presently used and useful in the public service, without the necessity of deciding whether the proof of value of the whole is adequate, the result is the same, namely, that only such

part is taken into the rate base as will be sufficient to supply the needs of the plaintiff's system at its present rate of consumption for five years (R., 1263, 1264). In our principal brief we said (pp. 54, 63-65) that if this position should be conceded for the sake of argument, the present rates would be seen to be confiscatory more clearly than on any other theory considered, for the reason that the amortization rate to be applied to plaintiff's amortizable property, would be, not the eighteen year amortization rate of 3.9%, but the five year amortization rate of 18.46%. The table showing our calculation of the confiscatory character of rates under this percentage is set out on pages 64 and 65 of our principal brief. To this the protestants have merely answered (pp. 168 and 183 of their principal brief) that while it may be fair to apply the 18.46 percentage amortization rate to the gas fields, it is unfair to apply this five year rate to the plant but that this should be amortized as before by the lower eighteen year amortization rate, and that if this is done the rates are not confiscatory. Their argument is that notwithstanding that the gas fields taken into the rate base will be exhausted at the end of five years, yet as the plaintiff has an eighteen year reserve, it should continue to call on this, so that this reserve will be moved forward year by year thus continuing to ensure always a five year supply until exhaustion of the reserves, and that during all of this time the plant would continue to function. This argument is unfair in the highest degree. If plaintiff is to be required to hold gas lands in reserve for the purpose of keeping down to the lower percentage its amortization rate on its plant, it should be allowed the valuation of all these reserves in its rate base. It is most unjust to say that it has no reserves that are worth anything for the purpose of the rate base and yet to say that it has reserves which are worth the great sum necessary to justify the maintenance of the expensive plant and that it must continue to hold these reserves in the public service for the full term of eighteen years, for the purpose of keeping down the amortization rate. This imposes on the plaintiff

the duty of holding for the public service an eighteen year reserve of gas and yet allowing it a return on only a five year reserve. One of two things must in justice be granted to the plaintiff. First, if it is to be allowed in its rate base the value of only a five year reserve, then it should be allowed in income account an amortization rate which will amortize within five years not only that reserve, but also the plant which is of no value when the five year limited supply is exhausted, for it is obvious that a gas plant without gas is of such small value that it can for practical purposes be disregarded. Or, secondly, if it is to be limited to charging for its amortization of plant to an eighteen year rate of amortization on the ground that its gas reserves will keep the plant going for eighteen years, it should be allowed in its rate base the value of the full eighteen-year gas reserves. Whether the protestants' argument in favor of limiting the gas reserves taken into the rate base to five years is based on the argument of lack of proof beyond a period of five years or from the argument that, though proved sufficiently, only a five year supply can be said to be used and useful in the public service, the result is the same; if gas reserves are considered sufficiently proved to limit the plaintiff to an eighteen year amortization rate on its gas plant for the reason that it is clear that the gas reserves will be there for eighteen years, the gas reserves must be considered as sufficiently proved to be taken into the rate base at the same rate of value as the rest of the gas lands; and stated from the other point of view, if the company is to be limited in the rate base to a five year supply of gas, it should be entitled to amortize at the five year rate not only the gas but also the plant whose usefulness is gone when the gas supply is gone. Protestants' argument, however, does neither of these things but decides both of them to its own advantage, considering the gas reserves as sufficiently valuable to justify the amortization of the plant only over an eighteen year period but not sufficiently valuable to allow anything for them in the rate base;

and this also was the decision of the court below, from which this appeal has been taken.

In this connection, to prevent misunderstanding, reference might be made to one observation of the Court below, to which protestants have also alluded, to the effect that the five year supply of proven gas territory would be sufficient, if limited to supplying the public service customers of the Company, to meet their requirements for a quarter of a century (R., 1264). It must not be thought that this would justify the use of the lower, or eighteen year, amortization rate for the plant. If we assume that this supply of gas which the Court below held to be used and useful in the public service is all to be allocated to the regulated service for the purpose of extending the life of that service and keeping down the amortization rate, then the whole value of these gas reserves, and not merely the percentage of them representing the West Virginia public service business, must also be allocated to that service, and if we do this the value attributable to the public service in West Virginia would be largely in excess of what is claimed by the appellant. That is to say, instead of adding $2,590,677 as the proportionate part of the gas reserves allocated by Judge Rose (R., 1273) to West Virginia, there should be attributed thereto the total value found by Judge Rose, to wit: $10,317,311.39 (R., pp. 1272-3). Then if in Judge Rose's table of computation (R., p. 1272), there be substituted for the figure $2,590,677, as the value of gas reserves, the entire value of the gas reserves, that is, $10,317,311.39, we would have a total value of property used in the West Virginia regulated business of $18,978,033.39, and there is no theory of the case, however fantastic, that will produce a fair return upon this valuation. We do not understand that the observation of the Court above referred to is intended to contest this, but we mention the fact to avoid misunderstanding.

The Merchant Theory.

In the Reply Brief filed by Appellees at page 11, there is a discussion of what is termed the Merchant Theory, the

suggestion being that, inasmuch as the Appellant is not only furnishing service but is also selling a product, a price should be fixed for its product which would be charged into its expenses as a Public Service Corporation and then it be allowed a fair return on the property used in distributing this product to its customers. The argument is stated that a merchant engaged in business furnishes himself with a stock of goods, and expects to sell those goods to his customers and make a fair profit on the whole stock as well as interest on the investment that he has therein. A fair application of this theory gets us nowhere in this case. The property of the Appellant, comparable to the stock of goods of the merchant, is its gas reserves and if, as in the case of the merchant, it is entitled to sell its stock of goods so as to get a fair return upon the investment therein or the value thereof, we have reached exactly the same point as a practical matter that we now occupy, for it is clearly shown that the gas reserves, which we might call the stock of goods from the merchant theory, are no more than a sufficient stock for the purposes of the business in which the Appellant is engaged. (Testimony, John B. Corrin, R., p. 289; Testimony, T. B. Gregory, R., p. 296; Testimony, T. O. Sullivan, R., p. 283). It will thus be seen that any calculation which contemplates selling each unit of the stock of goods on hand at exactly what it cost or at its exact value leaves out of consideration the requirements of Appellant to keep on hand a large supply of its product to meet the demands of its customers.

We repeat our contention that property which constitutes a reasonable and no more than a reasonable supply for future needs fairly to be anticipated is as much devoted to the public service and as justly entitled to a present return as property of any other character.

Proven and Probable Territory Are Not Segregated.

The argument of Appellees might be susceptible of the construction that the territory which Mr. Davis characterizes as

probable territory is remote from and disconnected with the territory indicated as proven. An examination of the record and of the very elaborate report made by Mr. Davis, however, shows that a large part of this territory called probable lies contiguous to and within the boundaries of proven territory and it is not classified as proven simply because a well has not been drilled within the distance that Mr. Davis considers is necessary to determine with absolute certainty that it is underlaid with gas. The court's attention is invited to his very complete and elaborate report which constitutes Volume 2 of the Record. The maps clearly indicate the location of the various classes of the territory and the report gives in detail his reasons why he thinks each piece of land should be given the classification that he has affixed to it. This report and these maps also show the location of all the wells which have been drilled, whether by the Appellant or someone else within the territory and the record of these wells, both as to productivity and original rock pressure. Mr. Davis's testimony (R., pp. 229, *et seq.*) contains a very full explanation of the method used in making up the maps referred to, as well as his report.

Attention is called to his testimony at page 243 where he was testifying, as he states, two years after he made the report in December, 1923. He instances the fact that since he made that report the Appellant and other companies drilled 215 wells in the territory which he had classified as probable and that of these 190 were productive and 25 were dry holes, indicating that his discount of 38% was excessive. He also states (p. 242 of the Record) that a considerable proportion of the territory which he classified as possible at the time he made the report in December, 1923, has, by the drilling of wells, since become probable and the territory which he classified as probable at the time he prepared the report in December, 1923, is now proven territory; that many an engineer would regard the territory indicated by him as probable to be proven territory, and that he regards it as proven from the standpoint of wells that have been drilled and proven productive.

Valuation by Practical Gas Men.

The valuation of appellees' gas reserves by practical gas men is criticized by appellees and it is insisted that this testimony is not worthy of consideration. One of the reasons for this suggestion by appellees is that it appears that all of these witnesses are interested in the gas business and are, therefore, prejudiced. Of course, this does not justify the exclusion of the evidence. It goes to its weight and not to its admissibility. It would be an unusual condition indeed if a witness could be procurable who would have the qualifications necessary to testify intelligently to the valuation of this property who was not engaged in the natural gas business either at the time of giving his testimony or at some time in the past, and we think that this testimony, instead of being discredited because the witnesses showed such familiarity with such property, should be given peculiar weight on that account. Another suggestion made for discrediting this testimony is that the conclusions reached by these witnesses are said by appellees to be based on what the gas could be sold for in a regulated market in other states. The exact opposite is the case. An examination of the testimony of these witnesses will indicate that instead of basing their value on what the gas could be sold for in a regulated market they were very careful to state that their judgment as to its value was based upon what could be procured for it in an unregulated market, and that there was such an unregulated market. As to the witness Sullivan (R., p. 282), he says, after fixing the value of the property at $34,000,000 and giving the basis upon which he arrived at that value:

> "That in fixing the value which he did on the gas reserves of the United Fuel Gas Company he has in view a free market in which the price received by the gas would not be affected by public service rates; that he had in mind such markets in the States of Ohio and Pennsylvania through gas lines which are already installed and some of which are already connected."

Upon this question, the witness Corrin (R., 288), after giving his opinion as to the value of the property, says:

> "that the gas produced by the United Fuel Gas Company could be entirely marketed, without relation to any state regulatory control or public utility commission control and that looking at the matter from that standpoint alone, and excluding the use of the gas by state regulated utilities, he still thinks the property is worth the amount given by him;"

The witness Gregory, at pages 295-6, shows that his value is based upon sales which might be made of the gas, after being produced, in markets in the territory extending from Buffalo, New York, down to Pennsylvania; that he knows that there are such markets, *and that this business is not under the regulation of public service commissions*, for the reason that the company of which he is the head is now supplying a large part of those markets.

In presenting this evidence as to the value of these properties from these witnesses, practical gas men, familiar from their business with the value of such gas lands, we were following the doctrine laid down by this Court in numerous cases that the value of real estate or rights in real estate is properly provable by the opinion evidence of men qualified by experience to pass on such a question; see, especially, *Montana Railway Company* v. *Warren*, 137 U. S. 348, 354, a case of proving the value of a mineral claim, the headnote of which is in part as follows:

> "In a proceeding under the right of eminent domain to condemn, for use in the construction of a railroad, an undeveloped 'prospect' in mineral land, the testimony of a competent witness, familiar with the country and its surroundings, as to the value of the land taken, may be received in evidence, inasmuch as such property is the constant subject of barter and sale, although its absolute and intrinsic value may be uncertain before development."

If there was other evidence of value to the contrary to contradict the evidence of these highly qualified witnesses, the appellees had ample opportunity to produce it and should have produced it.

Interstate Commerce.

In their reply brief, appellees insist that the Court cannot consider that any of appellant's wholesale business is interstate commerce, asserting that there is no evidence in the record that such is the case, and deduce from this supposed fact the doctrine that the West Virginia Public Service Commission has the right to regulate this business, although it has not done so. Whether the public service commission has the right or the power to regulate appellant's wholesale business we consider beside the point. It has not done so and, having left the appellant free to contract in regard to this business, we insist that it cannot now be considered as affecting rates fixed by the commission for the regulated business. And it must always be remembered that the allocation of property between the regulated and unregulated service is based on volume or volume by distance (demand mileage) and not on revenues.

However, the appellees are mistaken in the statement in their reply brief that there is no evidence that any of this wholesale business is interstate commerce. The evidence is direct and uncontradicted that the deliveries to the parent companies, the major part of this wholesale business and the part about which appellees are making so much complaint, is all interstate commerce. The witness H. A. Wallace (R., p. 347), testified that the gas delivered to the Ohio Fuel Supply Company and the Columbia Gas & Electric Company, which are the parent companies referred to by appellees, is for consumption in Cincinnati, Ohio, and Columbus, Ohio. Further than this, this Court has already determined in the case of *United Fuel Gas Company* v. *Hallanan*, 257 U. S. 277, that this very gas of this very company is interstate commerce.

Respectfully submitted,

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October 23, 1928.

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1927.

No. [redacted] 4 : 7

UNITED FUEL GAS COMPANY,
Appellant,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, *et al.*

BRIEF ON BEHALF OF INTERVENING APPELLEES, THE CITIES OF CHARLESTON AND HUNTINGTON, et al.

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IN THE

Supreme Court of the United States

OCTOBER TERM, 1927.

UNITED FUEL GAS COMPANY, Appellant, vs. THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, *et al.*	No. 79

BRIEF ON BEHALF OF INTERVENING APPELLEES, THE CITIES OF CHARLESTON AND HUNTINGTON, ET AL.

PART ONE.

HISTORY OF CASE AND STATEMENT OF ISSUE.

I.

THE QUESTION INVOLVED

The question involved is the constitutionality of the order of the Public Service Commission of West Virginia of March 24th, 1925, canceling the schedule of increased rates filed by the plaintiff gas company, and continuing in effect rates formerly approved by the Commission and attacked by the company in this suit as confiscatory. The plaintiff says that its property is being taken from it for public use without just compensation, and asks an injunction to restrain a continuance of the taking. The defendants, the Commission and the intervening cities,

deny the complaint of the company on the ground that the rates now in effect furnish an ample revenue for a fair return, operating expenses, depreciation, amortization and all other charges to which plaintiff is lawfully entitled

II.

THE DECISION OF THE COMMISSION

The case before the Commission, in its broad outline, was a typical rate controversy, with the duty cast upon the Commission of fixing a rate base, fair return, proper allowances for depreciation, amortization and a schedule of rates to carry such findings into effect. The opinion of the Commission referred to in its order complained of (R. 143) was written by Chairman Stathers (R. 82), and it is his opinion to which we refer as the opinion of the Commission.

Commissioner Divine concurred in the order, canceling the Company's schedule of increased rates, but disagreed with Chairman Stathers upon certain points not controlling, for reasons stated in a memorandum filed by him (R. 134). Commissioner Lewis dissented from the order of the Commission upon three grounds stated in a dissenting opinion filed by him (R. 139).

The properties of the plaintiff, a natural gas company, fell naturally and logically into two classes: the physical or tangible property, consisting of its pipes, buildings, machinery, and other equipment, and its gas rights, consisting chiefly of leases of many thousands of acres of land, mostly in the State of West Virginia, in part producing leases, and in part leases held by payment of an annual delay rental for the purpose of future drilling and production. The Commission determined the value of both of these classes, physical property and gas rights, together with certain allowances for going value and working capital, to be the rate base.

1.—Rate Base

Upon consideration of the use to which the property was put, the book cost, the estimated historical cost, the reproduction cost new less depreciation estimate, and applicable decisions of the state and federal courts, the Commission fixed the present fair value of the different elements of the property as follows:

Classification	*As of Dec. 31, 1923*	*As of Dec. 31, 1924*
Physical Property	$25,000,000.00	$25,648,457.72
Working Capital	990,000.00	990,000.00
Going Concern Value	3,000,000.00	3,000,000.00
Leaseholds	6,343,329.67	6,361,511.42
TOTAL	$35,333,329.67	$35,999,969.14

Except in the case of the value of the gas rights, which was based upon the book cost, that being in the Commission's opinion the fairest and most reliable evidence of value presented (R. 117), this valuation of plaintiff's property was determined upon a consideration of all of the evidence submitted by both parties.

Commissioner Divine was of the opinion that the rate base, including $666,000 for additions in the year 1924, should have been $41,165,000.00, made up as follows:

Physical Property	$26,660,000.00
Working Capital	990,000.00
Going Concern Value	3,000,000.00
Leaseholds	10,500,000.00
	$41,165,000.00

Having determined the rate base, the Commission next proceeded to consider the adequacy of the earnings of the

Company under the existing schedule of rates to pay a fair return thereon, after making proper adjustments and deductions.

2.—Net Earnings Available for Return

(A)—EARNINGS AND EXPENSES

The gross revenue of the Company for the year 1923 was $7,730,176.40. The operating expenses and taxes for that year were $3,734,802.82 (R. 132).

Certain adjustments were made by the Commission both in the earnings and expenses of the Company as shown by its books, in order to ascertain the net earnings available for return on the fair value found by it. These adjustments were:

(1)—CREDIT FOR USE OF GAS FOR THE PURPOSE OF GASOLINE EXTRACTION

The plaintiff's two stockholders below mentioned, own all of the capital stock of the Virginian Gasoline & Oil Company, to which company plaintiff granted the privilege of extracting the gasoline from its natural gas production. The Commission, following the ruling of the Supreme Court of Appeals of West Virginia, determined that 50% of the net earnings from gasoline manufactured should be added to the earnings of the plaintiff, to compensate it for the use of the facilities jointly used and added to the earnings of the plaintiff the sum of $934,393.41 for the year 1923.

(2)—ADJUSTMENT FOR GAS SALES TO PARENT COMPANIES

The Columbia Gas & Electric Company and the Ohio Fuel Supply Company own all of the capital stock of the plaintiff. The plaintiff during the year 1923 sold more

than one-third of its total gas supply to these two companies, at an average price of 7.279 cents per M cubic feet. In calculating the revenue of the company for that year, the Commission, again following the decision of the Supreme Court of Appeals of West Virginia, added to the plaintiff's earnings the difference between the revenue actually realized from the sales to the parent companies and the value of the same amount of gas based on the rates paid by comparable wholesale purchasing companies. This adjustment added to the earnings of the plaintiff the sum of $2,143,661 46.

(3)—OTHER MINOR ADJUSTMENTS

Certain other minor adjustments, consisting principally of a proportion of the joint expenses chargeable to other departments of its business, and profit and loss adjustments which were not carried by the company through its current accounts, were made by the Commission, in the amount of $187,533 93. (R. 132.)

(B)—DEPRECIATION AND AMORTIZATION

The Commission adopted the view of the plaintiff's engineer, Mr. Uebelacker, that depreciation is "simply an allowance for the equalizing of the annual expenditures for keeping the plant in condition to perform 100 per cent service." (R. 120.) To this end it allowed for depreciation 1.5 per cent of the book cost of all plaintiff's properties, equivalent to 1.12 per cent of the rate base, which for the year 1923 amounted to $404,333. In view of the fact that for the preceding fourteen and one-half years the company's average annual expenditure for depreciation was only $203,463.61, the allowance of the Commission was generous. (R. 128.)

Amortization is defined by the Commission as an annual allowance for the eventual retirement of the *present value*

of the leaseholds and operating plant (R. 120). While recognizing that amortization should be calculated over the entire life of the plaintiff's property, both past and future, the Commission did not undertake to estimate the amortization accruals prior to the period during which the company was subjected to public service regulation. It, therefore, commenced with the year 1916, the first year for which the Commission fixed a depreciation and amortization rate for this company. (Case No. 482, 1 P. S. C. W. Va. Dec. 238.) For the years 1916-1918 the rate fixed for both of such items was 6%. For the years 1919-1922 the rate was 8.6%. These rates, calculated on the respective rate bases then established, resulted in accumulations for depreciation and amortization during the entire period 1916-1923 of $16,788,210.12 (R. 123). Calculating the depreciation at 1.5% of the book cost during this period, and deducting the amount so found ($2,759,473.09) from the sum already found for both depreciation and amortization, the Commission found that the remainder, or $14,028,737.03, represented the reserve for the accrued amortization of the property (R. 123).

It is to be noted that this accrued amortization applies for the period from 1916 to 1923, and does not take into account in any way the accrued amortization for the period from 1909 to 1916, during which period the Commission was not in existence, or no rate litigation was before it. The Commission was created by an act of the legislature of West Virginia passed in 1913.

The Commission having found that the present fair value, including going concern value, but deducting working capital, should be the basis upon which amortization should be calculated, and having also found that the company, since regulation began, had been allowed for accrued amortization the sum indicated above, determined that a rate of 4.15% applied to the present fair value of the property would be sufficient, over the remaining life of plain-

tiff's property, to accumulate a reserve equal to such fair value. As hereafter shown, this figure of 4.15% was applied by the Commission to the fair value of the plaintiff's property, found by it to be $35,999,969.14, and not to the amount of $20,981,232.11 (present value less amortization reserve, $14,028,737.03) which appears in the Commission's decision. In other words, the Commission merely established the amount of $20,981,232.11 in order to assist it in determining what should be the proper amortization rate for the future. It also considered in this connection "the probable additions for the next five years". Chairman Stathers and Commissioner Divine differed sharply here, the former holding that the Commission should apply the amortization allowance to the present value, while the latter agreed with the protestants that amortization is for the retirement of investment and that the allowance therefor should be applied to the book cost.

(C)—REASONABLE RETURN

Considering the nature and claimed risk of the business, and the value of the service, a return of 8% upon the rate base was allowed (R. 130).

In the statement below, there is summarized the findings of the Commission on the various revenue and expense items above mentioned:

Classification	*Year Ended Dec. 31, 1923*	*Year Ended Dec. 31, 1924 (Estimated)*
Gross Revenues	$7,730,176.40	$7,770,000.00
Operating Expenses and Taxes	3,734,802.82	3,890,000.00
Net Earnings per Books	$3,995,373.58	$3,880,000.00
Add:		
Value of Gasoline Extraction Privilege	$ 934,393.41	$ 520,000.00
Additional Amount due on Parent Company Sales	2,143,661.46	2,400,000.00
Miscellaneous Adjustments	187,533.93	
Net Earnings available for Depreciation, Amortization and Return	$7,260,962.38	$6,800,000.00

(R. 133.)

3.—Percentage Available for Return, Depreciation and Amortization

It appears from the foregoing that the Commission approved allowances of 1.12% for depreciation, 4.15% for amortization and 8% for fair return, or a total net return of 13.27% upon the rate-base. It found the Company actually earned, in the year 1923, 20.55%, for these items, and in the year 1924, 18.89%, both of these percentages being figured on the present fair value of the property, as determined by it. Nevertheless, the Commission did not reduce the rates of the Company to the point where they would yield only the return found to be reasonable. The

bearing which this fact has on the question of confiscation is next pointed out

4.—Available Earnings Allowed by the Commission Capitalized at 8% to Show the Effective Fair Value of Plaintiff's Property

As already indicated, the amount found by the Commission as available for return, depreciation and amortization was, for the year 1923, $7,260,962.38, and for the year 1924, $6,800,000.00 (estimated). As will appear later, the effective amount allowed by the Commission for depreciation and amortization was $1,899,537.00, (5.27%, on fair value of $35,999,969.14) so that under its decision the amount available for return would have been as follows:

Classification	*Year Ended Dec. 31, 1923*	*Year Ended Dec. 31, 1924*
Net Earnings available for Depreciation, Amortization and Return, as above	$7,260,962.38	$6,800,000.00
Allowance for Depreciation and Amortization	1,899,537.00	1,899,537.00
Net Earnings available for Return	$5,361,425.38	$4,900,463.00

It will hereinafter be pointed out under the discussion of depreciation and amortization, that the allowance made for these items by the Commission was largely in excess of the actual requirements of the Company. However, assuming for the present the propriety of the allowance, **the above earnings, available for return, if capitalized at 8%, would have resulted in an effective rate base**

valuation by the Commission for the year 1923 of $67,000,000.00, and for the year 1924 of $61,250,000.00, instead of the rate base of $35,333,329.67 and $35,999,969.14, respectively determined, as heretofore stated.

Commissioner Divine's findings as to the net earnings available for return are set forth in tabular form below (R. 139):

Gross Earnings		$ 9,225,673.00
Add 50% Gasoline Net Earnings		934,393.00
TOTAL GROSS EARNINGS		$10,160,066.00
DEDUCT:		
Operating Expenses and Ordinary Taxes	$ 3,343,450.00	
Income Tax	312,346.00	
Amortization and Depreciation 3¼% on rate base of $41,165,000.00	1,337,862.00	
		4,993,658.00
NET EARNINGS AVAILABLE FOR RETURN		$5,166,408.00*

**Decision shows $5,227,408.00 evidently in error as details support above amount.*

Commissioner Divine concurs in Chairman Stather's views as to the adjustment of gasoline earnings, but differs with him upon the amount of the adjustment for gas sold to the parent companies and the allowance for amortization and depreciation. However, his final conclusion as to the net earnings available for return, after considering all of these items, is not materially different from that arrived at by Chairman Stathers. (Stathers, $5,361,425; Divine, $5,166,408.) **Capitalization of the net earnings determined by Commissioner Divine at 8% results in an ef-**

fective fair value of plaintiff's property of $65,000,000.00.

The third member of the Commission, Mr. Lewis, while disagreeing with both Commissioners Stathers and Divine as to the valuation of the leaseholds, amortization and depreciation and the amount of the adjustment to be made for sales of gas to parent companies, made no specific findings as to any of these matters nor as to the rate base or net earnings.

Each of these adjustments hereinbefore mentioned made by Commissioners Stathers and Divine for gasoline and for sales of gas to parent companies, as well as the allowance made by them for depreciation and amortization, is hereinafter separately discussed, and are, we submit, sustained by the evidence. The point we make at this time is that if this Court agrees with the District Court that the findings of the Commission upon these matters is sound, then the plaintiff's net earnings available for fair return upon the fair value of its property devoted to the public use, when capitalized at 8%, produces a value or rate base of $67,000,000, according to Chairman Stathers, and $65,000,000, according to Commissioner Divine, both of which figures exceed the valuation of plaintiff's said property, including therein the increased value of its leaseholds, alleged in its bill of complaint. The bill alleges that the total fair value of plaintiff's physical property, including going concern value and working capital is $34,621,996.57 (R. 14), and that the present fair value of its gas rights "is at least the sum of $30,000,000" (R. 16). This is all the property involved. This makes a total valuation or rate base claimed by the plaintiff of $64,621,996.57. It, therefore, appears that the amount of plaintiff's net earnings available for return to its stockholders, when capitalized at 8%, produces a valuation or rate base in excess of that alleged by the plaintiff.

Both Chairman Stathers and Commissioner Divine allowed to remain in operating expenses, $589,180.00, representing delay rentals and leasehold expenses for 1923.

If this amount be added to net earnings and capitalized at 8%, it will add $7,300,000.00 to the rate base, making the Stathers rate base $75,000,000.00 and the Divine rate base $72,300,000.00. See post p. 14 and p. 55.

III.

DECISION OF THE DISTRICT COURT IN THIS SUIT

The plaintiff filed its bill in the District Court of the United States for the Southern District of West Virginia, in which it sought an injunction to restrain the enforcement of the order of the Public Service Commission of West Virginia denying plaintiff an increase in rates. The District Court having refused a temporary restraining order, the application for an interlocutory injunction, pursuant to section 266 of the Judicial Code, was heard before Circuit Judge Rose and District Judges McDowell and McClintic. On May 18, 1925, the majority of that Court held (R. 1275), that the application for an interlocutory injunction should be denied. (*United Fuel Gas Co. v. Public Service Commission*, 14 Fed. 2d 209.) In the majority opinion, rendered by Judge Rose, found at page 1229 of the Record, it was stated that the maximum value of the property upon which plaintiff was entitled to a return *did not exceed* $40,307,311.39, made up of the following elements:

Physical Property	$26,000,000.00
Working Capital	990,000.00
Going Concern Value	3,000,000.00
Leaseholds	10,317,311.39
TOTAL	$40,307,311.39

(R. 1266.)

On the matter of net earnings available for amortization (exclusive of depreciation) and return, the court made the following finding:

Net Earnings per Books	$ 3,995,802.82
Add:	
Value of Gasoline extraction privilege	934,393.41
Additional amount due on Parent Company Sales	2,143,661.46
Miscellaneous Adjustments	187,533.93
Total Above Items	$ 7,261,391.62
Deduct:	
Depreciation Allowance	404,333.00
Amount Available for Amortization and Return	$ 6,857,058.62

(Record 1238-9)

In arriving at these net earnings, the court approved the adjustment made by the Commission for the use of gas and gas facilities in the manufacture of gasoline, as well as the adjustment for the sale of gas to the parent companies. It *reduced* the Commission's allowance for amortization from 4.15% to 3.65%, which it termed "a generous allowance" (R. 1236).

Capitalizing said net earnnings ($6,857,058.62) at 11.65%, the rate found to be necessary for fair return and amortization (8% for return, 3.65% for amortization), Judge Rose found that the earnings under existing rates resulted in an effective valuation of $58,858,872.27 (R. 1239), when the sales to parent companies are adjusted on the basis of the average sales price to similar wholesale purchasers, the method adopted by the Commission, or an effective valuation of $53,295,228.84 if such

sales be adjusted on the basis of sales to retail consumers, a difference of method which subsequently will be considered in greater detail

The District Court did not pass upon the question whether the delay rentals, amounting to $589,186.00, were properly deducted from earnings by the Commission as an operating expense, indicating doubt as to the propriety of such deduction, but the Court did state that if this item were not properly chargeable to such operating expenses, an addition of $5,000,000.00 to each of the foregoing valuations would result (R. 1271-2). As will appear later, this is the position taken by the protestants.

The plaintiff contends in this suit that the regulatory power of the West Virginia Public Service Commission applies only to the retail business in that State. Without passing upon that question the District Court made a finding as to the value and earnings applicable to the retail business in the State of West Virginia. It found that the fair value of plaintiff's property used in that business was not in excess of $11,251,499.00 (R. 1273), that the earnings applicable to return and amortization amounted to $1,441,935.00 (R. 1272). These net earnings, when capitalized at 11.65% (allowance for return and amortization), result in a value of $12,377,124.42. This is $1,125,624.12 in excess of the fair value applicable to West Virginia retail business. **Accordingly in the opinion of the Court there was no confiscation, even if the West Virginia retail business were considered as a separate enterprise.**

We call attention to the fact that if the delay rentals, as the protestants contend, are not a proper operating charge, the amount of this item properly charged to the West Virginia retail business, $147,945.00, consistently with the findings of the Court, will add an additional million dollars on which the applicant is earning reasonable return and amortization, so that the excess on this basis for the West Virginia retail consumers is over

$2,000,000.00, rather than the $1,125,624.12 found by the Court.

Further the District Court used a combined percentage of 11.65 for amortization and return in capitalizing net earnings to find the effective fair value of plaintiff's property. Its use assumes that all items of fair value are subject to amortization, while a number such as working capital, land, local distribution systems and the large element of salvage are not. The correct method would have been to find the reasonable and proper allowances for depreciation and amortization, deduct them from net earnings and capitalize the balance on the basis of a reasonable rate.

The same issue of confiscation and substantially the same questions involved in this suit were raised by the bill filed by the plaintiff against the Railroad Commission of Kentucky, *United Fuel Gas Company* v. *Railroad Commission of Kentucky*, 13 Fed. (2d.) 510. The opinion of that court was rendered by Judge Hickenlooper April 22, 1925. Judge Hickenlooper fixed the rate base upon which the Company was entitled to earn a reasonable return at $37,015,764, made up as follows:

Physical Property including overheads	$26,283,844.00
Working Capital	999,000.00
Going Concern Value	3,000,000.00
Leaseholds	6,732,920.00
	$37,015,764.00

IV.

SUMMARY OF FAIR VALUES FIXED BY THE WEST VIRGINIA COMMISSION AND THE FEDERAL COURTS

The findings of the several tribunals which have determined the fair value of plaintiff's property involved in this suit are:

Classification	Public Service Commission of West Virginia		District Court for Southern District of West Virginia	District Court for Eastern District of Kentucky
	Chairman Stather's Opinion*	Commissioner Dixon's Opinion	(Judge Rose)	(Judge Hickenlooper)
Physical Property	$25,648,457.72	$26,666,000.00	$26,000,000.00	$26,283,844.00
Working Capital	990,000.00	999,000.00**	990,000.00	999,000.00**
Going Concern Value	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00
Leaseholds	6,361,511.42	10,500,000.00	10,317,311.39	6,732,920.00
TOTAL	$35,999,969.14	$41,165,000.00	$40,307,311.39	$37,015,764.00

*Value stated as of December 31, 1923 was $35,333,329.67, but the Commission evidently considered 1924 plant additions in all its calculations (See R. 132-133).

**Evidently an error as all witnesses accept the figure of $990,000.00.

The maximum difference between the four tribunals as to the total fair value of the property is approximately $5,000,000, or only about 14% of the lowest value fixed. Commissioner Stathers and Judge Hickenlooper held that the book cost was the best evidence of the value of the Company's gas rights, while Commissioner Divine and Judge Rose, giving consideration to the evidence of the Company as to the appreciation in value of the gas rights, gave a value to such rights higher than the book cost, as hereinafter more fully developed.

We understand that in a confiscation case the specific findings of fair value become relatively unimportant if the record shows that the earnings derived from the property at existing rates, when capitalized on the basis of a reasonable return, result in valuations much higher than such specific findings. It must be kept in mind that the existing rates, though found by the Commission to yield more than an ample return, were not reduced to the point where they would yield only a fair return on the valuation established.

For a summary showing the result which obtains if the amount of net earnings is capitalized at the respective percentages found by the Commissioners and the District Court as reasonable for return—or for return, depreciation and amortization combined, in comparison with the specific finding of fair value made in each instance; see page 49 post.

The effective valuations indicated by this capitalization method range from $53,300,000.00 to $74,300,000.00. As heretofore stated, the present fair value alleged in plaintiff's bill is $64,621,996.00, or perhaps $66,070,496. (R. 7.)

The controlling question, therefore, before this Court in this suit is not whether the fair value determined by the Commission or the District Court is inadequate, but whether the value produced by capitalizing the net earnings derived from existing rates, upon the basis of a reasonable return, equals or exceeds any reasonable fair value sustained by the evidence. If so, there can be no confiscation.

The protestants contend that neither the Commission nor the Courts erred in finding too low a value, and that, on the contrary, the very highest estimate of fair value supported by the evidence was as follows:

Physical Property	$23,969,180
Working Capital	990,000
Going Concern Value	3,000,000
Leaseholds at Book Value	6,732,920
Total	$34,692,100*

**See Hagenah's Exhibits 1 (R. 1108) and 10 (R. 1228). Exhibit 1 is exclusive of going concern value which item witness testifies is $3,000,000, and which is added in Exhibit 10.*

As there is but slight difference between the parties as to the valuation of the physical property, and as the Commission accepted the so-called book cost as the value of the leaseholds, there is little difference between the protestants' claim and the Commission's finding in arriving at

the value of plaintiff's property for the purpose of fixing the rate base.

The protestants contend, however, that there was substantial error in the Commission's findings as to the net earnings available for return. Instead of the net earnings found by Commissioner Stathers, $5,361,425.38, or $5,166,408.00, found by Commissioner Divine, protestants claim that the net earnings available for return were at least $5,694,229.00, as shown below:

Gross Earnings	$10,160,067
Operating Expenses and Taxes	3,655,797
Net Earnings available for Depreciation, Amortization and Return	$ 6,504,270
Deduct—Depreciation and Amortization computed on Original Cost of Property	1,399,277
Net Earnings after Depreciation and Amortization	$ 5,105,043
Add Back—Delay Rentals on Unoperated Leaseholds and Leasehold Expense	589,186
Net Earnings available for Return	$ 5,694,229*

**See Jurgal Exhibit, I. J. C. No. 1 (R. 1161).*

This amount of net earnings, when capitalized at 8%, results in a valuation of $71,177,000, which is in excess of any estimate of fair value claimed by the plaintiff.

This statement of net earnings differs from the Commission's findings in respect of:

(a) The adjustment for parent company sales.

(b) The basis for computing annual depreciation and amortization.

(c) The exclusion of the delay rentals and leasehold expenses from operating costs.

Each of these adjustments will be discussed later.

PART TWO.

ARGUMENT

V.

STATEMENT OF NET EARNINGS

The two fundamental propositions upon which protestants rely, which will be developed in this brief, are:

First—Since the value arrived at by the capitalization of net earnings under existing rates equals or exceeds the present fair value of plaintiff's property as claimed by it, there can be no confiscation of plaintiff's property even though the Court may be of opinion that the Commission erred in its determination of the fair value of plaintiff's property, constituting the rate base found by the Commission.

Second—That there is, in fact, no error in the fair value of plaintiff's property as found by the Commission, but to the contrary, such valuation is more than liberal to the plaintiff.

The only problem involved in the first proposition is the proper statement of the earnings. Four questions were raised before the Commission as to the proper amount of the net earnings available for return on investment, namely:

1. The credit for the value of the gasoline extraction privilege.
2. The adjustment for parent company sales.
3. The allowances for depreciation and amortization.
4. The propriety of including lease rentals and lease expenses in the operating expenses.

1.—The Proper Credit for the Value of the Gasoline Extraction Privilege

In approaching the gasoline question, it is necessary to understand something of the nature of the business of extracting gasoline from natural gas, and its history as applied to the instant case.

The plaintiff, in 1916, began the extraction of gasoline from natural gas by processes developed at that time. The gas flows from the fields through the transmission lines and compressor stations to the gasoline extraction plants where the gasoline is taken out. The residual gas is redelivered to the transmission system for transportation to its ultimate destination. There is, therefore, joint use not only of the gas itself but also of certain facilities of the company, for the production and transmission of gas for utility purposes and for gasoline manufacture. If an independent gasoline producer wished to extract gasoline without entering into the business of selling gas for commercial and industrial purposes he necessarily would have to provide these facilities in order to secure the gas which is necessary in the extraction process. In other words, he would have to invest in gas acreage, gas wells and the necessary gathering and transmission pipe lines in order to bring his gas to the gasoline plant. Of necessity, he would have to incur the royalty payments on the gas, delay rentals on his leaseholds held in reserve, the cost of operating and maintaining the well supply and the cost of operating and maintaining the gathering lines and transmission system. A number of independent gasoline producers do this very thing.

Because of the fact that the plaintiff, in rendering its public utility service, already has these facilities, it is possible to use them jointly for utility and gasoline manufacturing purposes. This joint use of the facilities referred to calls for pro-rating of joint investment and expenses.

In the extraction process the primary essential is the gas itself. In view of the fact that it has been possible up to this time to extract gasoline from natural gas at a very much cheaper cost than to extract the same from crude oil by the so-called "cracking" process, the extraction privilege is very valuable. The evidence shows (R. 412) that over 90% of all gasoline produced is made from crude oil, so that the market price of gasoline is governed by the cost of production of the crude oil producer. Since the cost of producing gasoline from crude oil is much higher than the cost of extracting it from natural gas, the value of natural gas, as the raw material for the latter process, has increased substantially.

Originally the United Fuel Gas Company engaged directly in the gasoline extraction business. While so engaged, its application for a rate increase, designated by the Commission as Case No. 585 (*Re Application United Fuel Gas Company*, 1 P. S. C. W. Va. Dec. 501, P. U. R. 1918 C. 193) was considered by the Commission. In its opinion rendered February 28, 1917, it carefully considered the relation of the manufacture of gasoline to the gas utility business. At the end of the year 1916 the company had an investment in its gasoline business of $280,000 and its net earnings for the first six months of the year 1917 were $732,000. The Commission gave careful consideration to the method used in the business and the effect thereof on the residual gas. It was the contention of the company that the gasoline business was an independent enterprise not to be considered in the fixing of its gas rates, also that the extraction of the gas cleansed the gas and thereby protected fittings in the transmission lines from disintegration. Protestants, on the other hand, contended that since the company as a public utility had acquired certain rights and privileges not enjoyed by private corporations, and used its plant jointly in the distribution of gas and the manufacture of gasoline, the gasoline investment should be charged to gas investment

and the earnings therefrom credited to production expense, or that a proportionate part of the gas production based upon the ratio of the value of the production for gasoline and gas purposes, as reflected by the respective earnings from each business, should be charged to the gasoline business. Protestants' position was founded to a considerable extent upon the evidence of Mr. Halford Erickson, whom the Commission quoted as follows:

> "The gasoline business in this instance is essentially a part of the gas business. Whether or not the heat unit contents of the gas is materially lowered does not alter the fact that the gasoline station is essentially dependent upon the existence of the gas in mains for its own existence. A close analogy is found in the artificial gas utilities where the earnings from the sale of residuals are either carried as earnings or credited to production expense. * * * To treat the net gasoline earnings as a credit to production expense seems most equitable and least likely to lead to incorrect results."
>
> (*Re: Application United Fuel Gas Co.*, 1 P. S. C. W. Va. Dec. at page 518.)

The Commission stated that it did not wholly subscribe to the theories advanced by either of the parties. It took the position that the manufacture of gasoline from natural gas was rather a "use" than a "consumption" of said gas. It said that the only correct method of treatment was to credit to production and transmission expense "*the fair value of the use of the gas production per unit of volume used in the process of the manufacture of gasoline*." It took into consideration the evidence showing that 1,000,000 cubic feet of gas would produce 162½ to 165 gallons of gasoline, with the result of a loss of 30 cubic feet of gas in volume per gallon of gasoline and of from 15 to 22 heat units, and with the further result that the remaining

gas was cleansed and improved in quality. It appeared that the average cost of manufacture of gasoline, including royalty and a return upon investment, was from 6 to 10 cents per gallon. Assuming that the total volume of production for 1916 passed through the company's gasoline extraction plants, it appeared that it had the use of 39,000 million cubic feet of gas, which earned a net return of approximately $300,000.00, or about $7.70 per million cubic feet.

In considering the value of this use, the Commission noted that it had been shown in a recent case (*In re Application of West Virginia Central Gas Company*, 1 P. S. C. of W. Va. Decisions, 455) that "the privilege of extracting gasoline from the gas produced by that company has been granted to Hope Natural Gas Company *upon a royalty basis of fifty per cent of the output*." In other words, the Hope Company provided the entire investment necessary for the extraction of gasoline and paid voluntarily the producing company one-half of the output (gross earnings) for the privilege of using its gas in the manufacture of gasoline.

Taking all the facts into consideration, the Commission held that "one-half the net earnings is the proper measure of the value of the gas so used." The Commission used the following language which is of peculiar significance in connection with the subsequent efforts of the company to avoid the effect of this decision by the organization of the Virginian Gasoline & Oil Company and its attempt to sell or lease to it said gasoline rights, as hereafter stated:

> "In our opinion it is the duty of the utility to sell the use of its gas in the gasoline process for its reasonable value as if dealing with a stranger at arm's length. In other words, a gas utility *should not be permitted to sell the use of its gas to itself for a private enterprise* for less than its fair market value, or the price that could be obtained if said

production should be offered upon the open market. The reasonable value of that use is the measure of the earnings from that source that should be properly credited to the production and transmission expense. * * * We are justified in concluding that, measured upon the basis of net earnings from gasoline production as above set forth, the value of the privilege of using applicant's gas for the production and extraction of gasoline is equal at least to one-half of the net profits arising out of the business, and that earnings from this source should be properly credited to applicant's production and transmission expense. We so find."

(All italics in this brief are ours.)

After stating that the basis announced did not establish a controlling precedent and that a different conclusion might be reached upon a proper showing of facts, the Commission added:

"We realize that the basis here fixed is somewhat arbitrary, but in the absence of exact facts and figures we have endeavored to so adjust our conclusions as to be sure of doing no injustice to the applicant." (p. 522.)

Plaintiff renewed its contentions with respect to gasoline earnings in its case No. 845 (1 P. S. C. W. Va. Dec. 651, P. U. R. 1920 C 583), but the Commission, in its decision of December 19, 1919, said that no evidence had been offered sufficient to justify a change of its position in regard thereto.

The issue was a third time raised in case No. 1251 (Bulletin 70, decided April 28, 1922) and the Commission again affirmed its conclusion that the reasonable value of the use of the plaintiff's gas production for the purpose of gasoline extraction was one-half of the net earnings

from the gasoline manufacture. It relied upon its two former holdings in the United Fuel Gas Company cases and particularly upon its case of *In re: Hope Natural Gas Company*, (Case No. 663, 1 P. S. C. W. Va. Dec. 839, P. U. R. 1921 E. 418), where it used the following language:

> "It is unprofitable to produce or purchase gas for the sole purpose of extracting the gasoline content therefrom, and that inasmuch as a certain volume of the gas is consumed in the process and the heating value also slightly reduced, thus imposing a burden upon the gas business, the gas consumers are entitled to some proportion of any net earnings arising therefrom. In that case (*Re: United Fuel Gas Company*, Case No. 585) we fixed the measure of the reasonable value of the use of natural gas for the purpose of extracting the gasoline content therefrom by applying the terms of a contract made between the Eastern Oil Company and the Hope Natural Gas Company. We found this value in that particular case to be one-half the net earnings arising from the business."
>
> *In re: Hope Natural Gas Company*, P. U. R. 1921 E. at p. 429.

The reference to the contract between the Hope Natural Gas Company and the Eastern Oil Company is significant as indicating the value put upon the extraction privilege by two parties dealing at arm's length.

In order to avoid the effect of these decisions, on May 1, 1922, the plaintiff caused to be organized the Virginian Gasoline & Oil Company, a West Virginia corporation. It conveyed to the newly organized company all of its gasoline manufacturing properties and certain oil rights, in consideration whereof the Virginian Company issued to

the plaintiff all of its capital stock and assumed $1,717,000 of the plaintiff's outstanding bonds. On the same day plaintiff made a contract with the Virginian Company, the essential provisions of which, so far as the present issue is concerned, were:

1. That the Virginian Company should have the exclusive right to extract gasoline from natural gas produced by the plaintiff.

2. That all residual gas should be redelivered to plaintiff's lines free of charge, and

3. That in consideration for the extraction privilege, the Virginian Company should pay to the plaintiff *one-eighth* of the gross proceeds from the sale of the gasoline manufactured.

On June 22, 1922, plaintiff transferred all of the Virginian stock to the Columbia Gas & Electric Company and the Ohio Fuel Supply Company, the holders of all plaintiff's capital stock, herein frequently referred to as its "parent companies".

The foregoing inter-relations of the plaintiff and the Virginian Gasoline & Oil Company fully appear in the record of Case No. 1251—which case and record therein were, upon motion of the plaintiff, consolidated with the present proceeding before the Commission (R. 83)—as well as from the opinion of the Supreme Court of Appeals of the State of West Virginia in *City of Charleston* v. *Public Service Commission*, 95 W. Va. 91, at page 125, below referred to.

Plaintiff contends that its contract with the Virginian Company provides an adequate compensation for the extraction privilege. It so contended before the Commission in the second hearing of its Case No. 1251 (Bulletin No. 82, P. U. R. 1924 A 357). The Commission, as then constituted, (Commissioner Divine, dissenting) held that the contract of May 1, 1922, between the plaintiff and the

Virginian Gasoline & Oil Company, was valid. It was from this decision of the Commission that the protestants, including the City of Charleston, the City of Huntington, and others appealed to the Supreme Court of Appeals of the State of West Virginia. That court, the court of last resort in the State, definitely rejected the Commission's latest ruling, and unanimously approved the three earlier decisions of the Commission.

The opinion of Meredith, President, contains a full discussion of the whole question. The court's answer to the statement of the Commission that one-eighth of the gross earnings from gasoline "may exceed one-half the net revenue derived from the operation of the gasoline properties", is conclusive. (Opinion, p. 123). The answer was the following tabulation based on actual sales during the period, 1917-1922:

Division of one-eighth of the gross and one-half of the net revenue:

	One-eighth gross	*One-half net*
1917	$239,374.25	$ 669,955.28
1918	289,275.18	799,235.37
1919	361,801.17	1,093,650.60
1920	451,813.76	1,340,810.35
1921	344,510.52	1,032,759.80
1922	379,007.13	1,171,752.22

The foregoing tabulation is substantially the same figures as are shown in "Jirgal Exhibit No. 8", R. 1158-1160.

The holding of the court upon the validity of the alleged sale of the gasoline extraction privilege by the plaintiff to the Virginian Gasoline & Oil Company is sufficiently stated in points 6 and 7 of the syllabus of the court:

> "6. The reasonable value of the use of the natural gas production of a public service company for

the purpose of the manufacture of gasoline therefrom, as shown in the present case, is fifty per cent of the net income derived from the production and sale of the gasoline."

"7. Where in a rate case it is shown that a natural gas utility company has caused a corporation to be formed and has transferred to it, with other property the exclusive right to use all its natural gas for the purpose of extracting gasoline therefrom and receives therefor all the capital stock of the new corporation and is to receive as royalty one-eighth of the gross proceeds of the gasoline as it is produced and sold, and it appears that half the net proceeds therefrom annually amount approximately to three times the eighth of the gross proceeds, such a sale, so far as the gas consuming public is concerned, is unfair; it is a sale made by the company, with the company, and for the benefit of the company, and should be ignored in determining the proportion of the income from gasoline which should be charged to the utility."

The State Supreme Court reversed and set aside the order and findings of the Commission and remanded the case to the Commission for such further investigation and action in accordance with the decision of the court as should be proper. Pursuant to this order the Commission proceeded further to investigate the value of the gasoline extraction privilege. Its conclusion, after considering the testimony introduced before it was stated by Chairman Stathers (R. 130), as follows:

"Our examination leads us to the conclusion that under the facts in this present record, considered together with the facts in the record of Case No. 1251, we must reach the same conclusion as that at which the Supreme Court of Appeals arrived. The

> record supports and compels a finding agreeable to said holding, so that, using the language of the court, 'We think the extraction privilege is worth at least fifty per cent of the net profits and that proportion should be charged to the gas business'"

This position was expressly approved by Judge Hickenlooper in the Kentucky case, as allowing "a most generous return on the value of the property used for extraction purposes" and "in no wise unreasonable." (*United Fuel Gas Company* v. *Railroad Commission of Kentucky*, 13 Fed. (2d.) 510.)

Judge Rose's finding upon this point was as follows:

> "We do not find it necessary to consider whether the issue there passed on is now *res adjudicata* because even if it is not, we are as to it of one mind with the highest court of the State." (R. 1237.)

For the year 1923, one-half of the net earnings from gasoline extraction amounted to $934,393.41. One-eighth of the gross earnings amounted to $876,732.57. (Data based on Jirgal Exhibit No. 8, R. 1158.)

Protestants contend that said holding of the highest court of the State is the law of this case.

> *New York & Richmond Gas Co.* v. *Prendergast*, 10 Fed. (2d.) 167, 208.
> *City of New Orleans* v. *Citizens' Bank of La.*, 167 U. S. 371.
> *Guffey* v. *Smith*, 237 U. S. 101.

Apart from the application of the principle of *res adjudicata*, protestants submit that the finding of the Commission as to the value of the gasoline extraction privilege is amply sustained by the evidence adduced before it

in the present proceeding. Two points developed by the evidence deserve special consideration, namely:

1. The joint use of the facilities by plaintiff and the Virginian Gasoline and Oil Company.

2. Valuation of the extraction privilege, as measured by ordinary principles governing the valuation of such privileges.

Mr. Jirgal, witness for the protestants, gave as his reason for crediting 50% of the gasoline net profits to the Gas Department the following (R. 412):

> "That the reason for assigning one-half of the net profits from the gasoline business to the natural gas business is that, in the first place, there is a joint use of facilities. The gas is taken out of the ground from acreage that costs the company money; that gas is transmitted or gas is also taken out of the ground through wells that also call for an investment; the gas used is piped to the gasoline station; the acreage which is called upon to yield the gas costs the company considerable every year in rentals, for which the gas department is assessed; royalties are paid; it costs something to operate and build a transmission system, and that would seem to call for a division of those items between the two projects. The exact amount of the money is rather difficult to ascertain, but some division it would appear would have to be made. The cost accounting principle is not to consider one of two major products as a residual product, and the other as bearing all the cost. Some fair division has to be made between the two major products. Now then, looking at it from the purely economic side, you have this situation, that from 90 to 95 per cent and possibly more of the gasoline in this country is manufactured from the crude oil refining process.

That means that the crude oil refinery will, in a fair competitive market, determine the price because it will be that cost of production which will determine the price on which they can sell their gasoline at a profit. Now, that makes it a question of relative costs between the natural gas gasoline process or the natural gas extraction process and the crude oil process, and as long as there is a differential the natural gas producers will get the difference in profit. Now you are giving him a very large differential advantage, when you do not assign any costs at all for the raw product he uses in the manufacture, and that is natural gas. In the crude oil process, as I understand it, there are a great many economies being perfected, and the cracking process I understand is being made more efficient. That means that the margin between the natural gas extraction process and the crude oil process will decrease, if the natural gas process does not also become more efficient. Now the records of the company show, as I recall them, that each year there is a gain in the amount or yield per thousand feet, which goes through the gasoline extracting station. So it shows that that method is becoming more efficient, but it is a question as to which process is becoming relatively more efficient. Anyone going into the question of extraction from natural gas would therefore be willing to pay the natural gas producer that price which would allow him to meet the crude oil refiner's price. In other words, he would pay that much more for the natural gas rights or for the right to extract from natural gas the amount represented by the difference in his cost of production and the cost of production by the crude oil refiner. He wouldn't pa, absolutely that differential, because he would be taking all the risks of the manufacture and he would be taking

the risks over a series of years, and of course he would want some leeway because he wouldn't want to take all the risks and get nothing of the gain going into it, but that would be the principle that would determine how much he would pay for that right. Now, in the previous hearing I have attempted to show, from figures of the Federal Trade Commission, that that right would be more valuable than the fifty per cent. Whether or not these figures would obtain at this time, I am not able to say, but the principle would govern just the same, and if there is no differential there would be nothing to split. I think the question is merely a question of determining a fair basis for paying for the right or privilege of extraction to the natural gas producer."

Jirgal credited 50% of the net earnings of the gasoline end of the business to the Gas Department in all of the exhibits presented before the Commission. It appears (R. 413) that he had previously made a study of specific data from the bulletins of the Federal Trade Commission, which show that the privilege of extracting gasoline from gas was worth at least three cents per thousand cubic feet, which, based on the sales, sustained a credit of more than 50% of the gasoline net earnings.

Mr. Krebs, a consulting geologist and mining engineer of Charleston, who testified with respect to contracts between parties dealing at arm's length, with which he was familiar, providing for the extraction of gasoline from natural gas, stated that it was his opinion that the value of the extraction privilege was at least 50% of the net profits from the sale of the gasoline. (R. 489.)

Mr. Hagenah, for the protestants, by his "Exhibit No. 9" (R. 1226 and 1227), showed an assignment to the gasoline

department of its proportion of the joint investment and expenses. This exhibit of Mr. Hagenah is, we submit, conclusive that the 50% division of the gasoline net earnings is more than liberal to the applicant. Mr. Hagenah showed that of the total joint expenses, $607,562 was assignable to the gasoline department, and that of the total reproduction cost less depreciation of the joint physical property, $5,185,939 was assignable to the gasoline end of the business. Using these findings of Mr. Hagenah as a basis, the expenses of which the gas department should be relieved by the gasoline department would be as follows:

Operating Expenses	$ 607,562.00
Fixed Charges (on gasoline proportion of joint property—($5,185,939) representing depreciation, amortization and return of 8% on investment—all estimated at 13.27% by the Commission)	688,174.00
Total Gas Department Costs Assignable to Gasoline Department	$1,295,736.00

On the basis of this statement of expense allocation the Commission very properly could have credited to the gas department $1,295,736.00 instead of its credit of $934,393.00, a difference of $361,343.00.

Jirgal's Exhibit "No. 8" (R. 1158) shows that for the year ended December 31, 1923, the gasoline end of the business had net earnings of $1,868,786.82 after taking into consideration all prior charges including depreciation and federal income taxes. If from these net earnings there is deducted the $1,295,736.00 of costs which were borne by the gas department, but which should have been borne by the gasoline department, the latter business would have a net earning of $573,050.00 available for return on the gasoline investment of $1,167,397.00, *or over forty-nine per cent.*

That a credit of one-half of the gasoline net earnings to the gas department for the extraction privilege has been more than fair to the gasoline department is shown by "Jirgal's Exhibit No. 8", (R. 1158), which is summarized below:

Year	*Investment in Gasoline Plant at End of Year*	*50% of Gasoline Net Earnings Retained by Gasoline Department*	*Per Cent Return on Investment Earned by Gasoline Department after paying 50% for Extraction Privileges*
1916	$ 279,980.77	$ 127,676.13	45.60
1917	437,678.87	662,446.51	151.35
1918	525,999.83	791,519.38	150.48
1919	752,970.03	1,103,637.70	146.57
1920	938,347.34	1,320,292.99	140.70
1921	989,852.22	999,587.21	100.98
1922	1,073,483.50	1,101,705.72	102.63
1923	1,167,397.25	934,393.41	80.40

In no single year since 1916 (the first year in which the extraction took place) has the return on the gasoline investment, represented by 50% of the net earnings, been less than 80.40%. It is inconceivable that in a free-competitive market the Virginian Gasoline & Oil Company could earn any such profits as these, provided it paid for its gas on the basis of the full value of the gasoline extraction privilege. The Commission, therefore, has been exceedingly liberal in valuing the gasoline extraction privilege at only 50% of the gasoline net earnings.

The only serious contention, apparently, made by the plaintiff relative to the gasoline credit is that it is abnormal. In other words, the claim is made that the credit of $934,000 made by the Commission will not represent the

normal credit which can be expected on this account. This contention is answered by the statement introduced immediately above, in which it is shown that in no year since 1919 has the 50% credit amounted to less than that amount ($934,939.41). As to applicant's contention that the 50% rule results in a fluctuating credit, the Court has only to review the amounts for the last five years to see that such fluctuations are not any greater than could be expected in normal operations of any business of this character. Protestants claim that the fluctuations have not been so marked that the Commission could not rely upon the application of its rule in determining the proper amount of the

While the credit applicable to the year 1924, as shown by the record (R. 1160), is lower than many of the preceding years, the testimony of Mr. Hagenah showed that the gasoline conditions in that year were not abnormal, but subnormal (R. 452). The data already introduced above shows that this is the case. It appears from Uebelacker's testimony that the price of gasoline had nearly hit bottom in 1924 (R. 226). The Commission used 1924 prices for its adjustment for that year, reducing its allowance for 1924 to $520,000.00. That the Commission's estimate was accurate is demonstrated by the fact that the total earnings from the gasoline business for 1924 proved to be $1,066,110.32. (Plaintiff's brief, p. 60, R. 1066.)

The price of gasoline is not the only factor in the determination of gasoline net earnings. Hightower's chart (R. 987), referred to at page 60 of plaintiff's brief, shows that the price of gasoline had fallen from 25.73c per gallon in 1920 to 14.86c per gallon in 1923, or about 10.87c, equivalent to 42%. During the same period the net earnings of the gasoline department decreased only 29% (from $2,640,585.00 to $1,868,786.00, R. 1158). In 1921 with gasoline at 19.92c a gallon, the net earnings

were only slightly higher than in 1923 when gasoline was selling at the low price of 14.86c. In 1922 with gasoline selling at 18.42c per gallon, the net earnings of the Virginian Gasoline & Oil Company were actually higher than in 1921 when the price was 19.92c. (Hightower, R. 987.) Price is only one of the many factors which influence operating results.

The protestants, in summary of this question, contend, (1) that the principle of crediting one-half of the gasoline net earnings is *res adjudicata* in the State of West Virginia, (2) that even if this be not true, the credit is more than supported by an allocation of the investment and expenses of the joint facilities used in this connection; and (3) that the fairness to the applicant of the 50% principle is supported by the testimony before the Commission.

It is significant that none of the Commissioners in this case questioned the fairness of the 50% division, and it is not surprising that Judge Rose in his opinion should have concluded his consideration of the subject by approving the finding of the highest court of the state.

2.—The Proper Allowances for Parent Company Sales.

Commissioner Stathers adjusted plaintiff's earnings by adding thereto the sum of $2,143,661.46. (R. 132), representing the difference between the grossly inadequate amount actually realized from the sale of 17,613,173,000 feet of gas during the year 1923 to its two parent companies (7.279c per M cubic feet) and the value of the same amount of gas based upon sales to its other wholesale buyers. As indicated by Judge Rose (R. 1238), plaintiff had never seriously contested the propriety of an adjustment for these sales prior to filing its brief in this Court. The figure adopted by the Commission was based

upon the calculations of Mr. Nease, the Commissioner's statistician, designated by Chairman Stathers as "Nease Exhibit No. 12", (R. 132) and which was not included in the printed record. The Commission has uniformly required such an adjustment, and its holding upon this point received the definite approval of the Supreme Court of Appeals of West Virginia in this same proceeding, *Charleston v. Public Service Commission*, 95 W. Va. 914, where the Court said:

> "It will be recalled that the two parent companies, the Columbia Gas & Electric Company and the Ohio Fuel Supply Company, respectively, own 51% and 59% of the capital stock of the United Fuel Gas Company. The company for several years had been selling gas in enormous quantities to these and other gas companies at wholesale rates. For the most part, these sales were made under special contract. * * *
>
> The rate to the Columbia Gas & Electric Co. and the Ohio Fuel Supply Co., the parent companies, has been very low; for 1922 it was 7 cents per thousand. During the same year the Hope Natural Gas Company paid 15.51 cents and the Pittsburgh & West Virginia Gas Company paid 16.83 cents, or an average on their total of 15.7 cents. The commission held that the company was not receiving sufficient from its two parent companies, and the revenue received from them should be increased by at least $1,000,000, in other words, these two companies should help make up any deficiency in revenue. Protestants claim that the $1,000,000 increase is not sufficient, viewed in the light of the quantities of gas sold, that these two companies should pay at least as much as the average price charged the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company. If

this were done, the two parent companies would have paid for the gas sold them in 1922 $1,463,398.93 more, instead of $1,000,000 more under the old rate. Without discussing in detail these various special contracts and the supply furnished these various companies during the cold weather months, we think it clear that the Hope Natural Gas Company and Pittsburgh & West Virginia Gas Company in practical effect enjoy no special advantages over the Columbia Gas & Electric and Ohio Fuel Supply; hence the two latter companies should pay as high a rate as the two former. By so doing it increases the amount to be paid the utility, at least in accounting $1,463,398.93 more than the amount fixed by The Commission. *The record shows that a very considerable part of the company's investment has been made to supply these wholesale customers and they should bear their share of the burden.*"

Plaintiff's bill does not attack the adjustments further than to intimate that the Commission, after making the adjustment, dealt unfairly with the plaintiff in failing to separate its so-called public service sales from its profitable wholesale business, a proposition which protestants challenge, and to the answer of which a section of this brief will be devoted.

The average price which plaintiff charged the Columbia Gas & Electric Company and the Ohio Fuel Supply Company, two public utilities, for the year 1923 was 7.279 cents per M cubic feet. Other comparable wholesale buyers paid an average of 19.45 cents (R. 138). The difference measures the extent of the preference in price accorded plaintiff's affiliated companies.

Protestant's witness, Jirgal, filed exhibits based upon a different method of calculating this preference. Instead of comparing the price to the parent companies with the price charged similar buyers, he compared it with the

average price charged the West Virginia retail purchasers, after deducting the cost of operating the distribution system, a branch of the plant not necessary for selling gas to wholesale buyers. This distributing cost he found to be 4.5 cents per M cubic feet, which he deducted from the average retail price, 20.27 cents, and arrived at the figure of 15.77 cents (R. 1065) as representing the price of gas delivered to parent companies if those companies should be placed on the same basis with West Virginia retail consumers. On this basis the adjustment amounted to $1,495,496.60 (R. 1065). Commissioner Divine adopted this theory of calculating the adjustment. This is the adjustment which was used in the computation of the gross earnings of $10,160,067, for the basis of calculating net return and from which we arrived at a capitalized effective valuation of plaintiff's properties of $71,177,000. (Ante, p. 19.) Had we used the Commission's adjustment of $2,143,661.46, there would have been increase in earnings of $648,164.77, and the capitalized value would have been increased to $79,000,000.

Plaintiff does not contend that the price charged the parent companies is a fair price, although admitting they are preferred in the deliveries of gas. (Wallace, R. 347, 356.) Indeed, it is much less than Mr. Davis' estimate of the value of the gas in the ground. What it does contend is that so long as it serves its "public service consumers" it can do as it pleases with the rest of its gas. (Plaintiff's brief, p. 57), and infers that the Commission has attempted to manage its private affairs in much the same manner as did the State of Kansas in its regulation of the wages of the employees in the meat packing industry. The isolated language quoted by plaintiff from Mr. Chief Justice Taft's opinion in *Wolff Packing Co. v. Court of Industrial Relations*, 262 U. S. 1110, is an inhibition against the regulation of wages by the State in a purely private business. The proposition here presented is the duty of a public service company whose entire business is devoted to the public

use, and long since clothed with a public interest, to deal fairly with its patrons and to make only such contracts with affiliated corporations, as proper discretion, good faith and sound business judgment dictate.

> **"Though a court will not generally substitute its own judgment for that of managing officers of utility company concerning contracts for supervision and special service, such rule is inapplicable where there is common control of both utility company and party with whom it contracts."**
>
> Syl. Pt. 53, *Idaho Power Co. v. Thompson*, 19 Fed. (2d) 547, (1927).
>
> *State of Missouri, ex rel., Southwestern Bell Telephone Co. v. Public Service Commission*, 262 U. S. 276.
>
> *Harrisville v. Imperial Oil & Gas Co.*, 96 W. Va. 315.
>
> *Jamaica Gas Light Co. v. Nixon*, 181 N. Y. Sup. Ct. 623.
>
> *Ohio Mining Co. v. Public Utilities Commission* (Ohio) 140 N. E. 143.

As will later appear, plaintiff acquired many hundreds of thousands of acres of gas leaseholds in the year 1909, and a considerable amount each year up to the present time. During this entire period the public, in the rates paid by them, have paid in the form of operating expense the carrying charges and rentals without which these leases would have been lost to the plaintiff, the amortization and depreciation charges to retire plaintiff's properties upon their exhaustion and a fair return upon the value of its entire physical plant and gas rights. In its several applications to the Public Service Commission it uniformly has presented its estimates of value of its property devoted to public use, which included all of its property of every kind. Never until now has it presented to any court or

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commission the argument that but about one-fourth of its property is devoted to public service. It could not do so. Its miles of pipe lines, its pumping stations, its wells, its gas leases are an indivisible whole, invested with a public interest for rate making purposes since its organization as a public utility. Without the power of eminent domain it would long since have been denied access to many of its most valuable leaseholds, and without franchise rights in West Virginia cities and towns it could not have enjoyed the profits of its industry. It can not have two characters in precisely the same activities of its business.

> Ritz, Judge: "For the purpose of this delivery the petitioner under our law is a public servant. It exercises the power of eminent domain for the purpose of securing rights-of-way for its pipe lines. It extends the same over the public highways and streets, and appropriates them to its uses, as it contends, partly for the public good, but partly purely for private ends. The duty of the petitioner to supply the public with gas is its paramount duty. It makes no difference who that public is, or to what use the gas is to be appropriated. If the petitioner was allowed to conduct one-half of its business under public regulation, and to sell the other half of its product upon private contract, the result would be disastrous to the public for the rates charged to private consumers would control those charged to the public consumers, or vice versa. The intricate accounts which would have to be kept in order to indicate the proper part of the company's expenses chargeable to the one or the other part of its business would be so easily manipulated that in the end the so-called private consumers would either be paying largely for the public service or the public consumer would in a large measure be paying for the gas furnished for manufacturing purposes. No

one can serve two masters is as true today as it was two thousand years ago, and it cannot be doubted that, if this petitioner is allowed to divide its allegiance in the manner desired, the service rendered by it to the class of its patrons, which it would soon despise would be inefficient and ineffective to meet their reasonable demands, to the end that the needs of that other class of patrons which had secured its favor might be the more efficiently met. We are clearly of the opinion that so long as the petitioner is engaged in supplying gas to the public in the manner in which it is at this time it cannot supply a part of that public under private contract, and a part of it under public regulation."

Clarksburg Light & Heat Co. v. Public Service Commission, 84 W. Va. 638.

Accord: *Arkansas Nat. Gas Co. v. Norton Co.*, (Ark. Com.) P. U. R. 1924 E 675.

Peoples Gas Co. v. P. S. C. (Pa. Sup. Ct.) 123 Atl. 799, P. U. R. 1924 D 507.

Plaintiff would have this court consider its West Virginia retail business as a separate industry. It makes no suggestion, however, that any adjustment be made for the disproportionate amortization burden which the tremendous sale of gas at inadequate rates to its parent companies necessarily entails.

As shown, the determination of the proper adjustment on the basis of retail sales involves the calculation of the cost of distribution, which Mr. Jirgal fixed at 4.5 cents per M cubic feet. Therefore, it is proper to take issue here before closing the argument on this point, with plaintiff's statement in its bill (R. 19) that "The experts on both sides" agree that the cost of distribution (exclusive of transmission and production cost) to West Virginia domestic consumers is 7 cents per thousand cubic feet. By a most painstaking consideration of all of the elements

of this cost Mr. Jirgal arrived at a figure of 4.5 cents. The basis of this adjustment is fully covered at page 1065 of the Record. The details of this calculation follow:

West Virginia Distribution System Operating Expense (R. 1067)	$101,228.00
Commercial Expenses incurred in West Virginia Retal Business	86,315.00
Fixed Charges on Cost of Reproduction less depreciation—West Virginia Distribution System—found by plaintiff's witness to be $2,380,622 (R. 538)—Taken at 14.6% (13.27% for amortization and return and 1.3% present rate for taxes)	350,400.00
TOTAL	$537,943.00
Number of M Cubic Feet sold in West Virginia in 1923	11,675,645
Average Distribution Cost per M Cubic Feet on above basis	4.6 cents

Instead of seven cents per M cubic feet for cost of distribution, therefore, the highest claim which the protestants recognize would be 4.6 cents per M cubic feet. This cost of distribution is substantially equivalent to the cost which would obtain even if the valuation of plaintiff's engineer were used as a basis. No such cost as seven cents per M cubic feet for distribution is justified by any evidence.

3.—Proper Allowances for Depreciation and Amortization

Chairman Stathers distinguished between depreciation and amortization, evidently considering that the former should cover the renewals of property which are necessary

from time to time, until the exhaustion of the gas supply, but that amortization should cover return of the full fair value of the property ascertained as of any given valuation date.

The Commission ruled that the depreciation allowance should be computed on the original cost of the property. Chairman Stathers held that the much larger allowance for amortization should be calculated on the fair value. The allowance for depreciation was placed at 1.5% of the original cost of the property, which was equivalent to 1.12% on the fair value of the property (R. 129). The allowance for amortization was set at 4.15% of the fair value of the property. Relating these allowances to the fair value of the property as the basis for calculation, a total of 5.27 per cent is arrived at. Commissioner Divine applied amortization as well as depreciation to the book cost (R. 137).

Plaintiff's bill alleges that the Commission erred in arriving at 4.15% as the reasonable allowance for amortization, charging that in arriving at such percentage the Commission fixed the present depreciable value of plaintiff's property by erroneously deducting from its present value its depreciation reserve based on the depreciation rates allowed by the Commission for the period 1910-1923, inclusive. In other words, the plaintiff takes the position that the Commission had no right to take into consideration the fact that the plaintiff had already charged the consumers as a part of its rates, the sum of $14,028,737 for the purpose of amortizing its property (R. 123). To deny the right of the Commission to take these accumulated amounts into consideration is to contend that it must ignore altogether the amount of the plaintiff's property which had been amortized through the rates received by it in the past, which included specific allowances by the Commission for amortization. The effect of such a rule would be to hold that the Commission could never reduce

or increase an amortization rate, if the history of the amortization reserve accumulated through its former orders showed that such reserve was accumulating too fast or not fast enough. It seems self-evident that amortization being a matter of estimate, the Commission must have the power to change the estimated rate, if it finds the actual fact to be that the plant is being amortized too slowly or too rapidly.

This proposition, however, has very little bearing upon the controlling question involved here. The controlling question is: What value will be amortized by the annual amount allowed by the Commission for depreciation and amortization if it is continuously applied until the expiration of plaintiff's gas supply.

The annual amount actually allowed by Commissioner Stathers through the application of the 5.27% to the fair value of $35,989,969.14 was $1,899,537.00 for amortization and depreciation. For the fourteen and one-half years the plaintiff had averaged $203,463.61 for annual depreciation expense (R. 1281). The calculation of this reserve follows:

Balance on December 31, 1923 of Depreciation and Amortization Reserve allowed by commission in previous rate cases	$14,028,737
Annual allowance of $1,696,074 ($1,899,537 less annual depreciation expense of $203,463 based on average of last 14½ years)	30,529,332
Total fair value which would be amortized	$44,558,069

(A)—FACTORS IMPROPERLY DISREGARDED BY COMMISSION

In fixing this amount for depreciation and amortization as reasonable, the Commission left out of consideration the following (See Hagenah's and Jirgal's testimony, R. 480 and R. 409, respectively):

(1) Salvage value when supply of gas is exhausted and non-depreciable properties.

(2) Interest earnings on the reserve fund.

The above amount of $44,585,069 is higher than any fair value of plaintiff's property found by any court or commission. The conclusion from this is that unless the fair value established by the Commission and the District Court is shown to be inadequate, the allowance for depreciation and amortization must be conceded to be liberal to the plaintiff. The District Court held that it was more than sufficient (R. 1235).

It would not be necessary to pursue this matter further but for the contention that the value set by the Commission was appreciably less than the fair value claimed by the plaintiff. The protestants contend that had the Commission considered the two elements relating to amortization and depreciation above pointed out, the annual allowance for amortization computed on the basis of the present fair value of the property instead of its original cost, would have been sufficient to amortize the entire fair value claimed by the plaintiff.

(1)—SALVAGE VALUE AND NON-DEPRECIABLE ITEMS.

It is very difficult, as stated by the Commission, (R. 125) to ascertain the amount of salvage which will remain in the property after the gas supply is exhausted. We know, however, that this salvage value will be a considerable amount. The distribution systems, valued by Mr.

Uebelacker at $3,349,509.00, can be used for the distribution of artificial gas. The company owns valuable real estate, including its office buildings in the cities of Charleston and Huntington, and other property, the appreciated value of which will not be lost when the natural gas supply is exhausted (R. 538). It is a common practice in the gas fields to reclaim from the wells all of the tubing and casing, which can be sold to other producers of natural gas. The transmission and gathering line pipes of the company are, in a great many instances, on or near the surface of the ground, and are therefore not hard to reclaim when they have served their present purposes. In fact, the company is continually removing such pipe in the field from one well location to another, and finds it advantageous to do so, rather than to buy new pipe. The buildings of the company are strategically located, are of a substantial character and could easily be converted to other uses. Much of the machinery of the company would still be useful, and could be sold to other natural gas companies when plaintiff's supply of gas is gone.

It is inconceivable that the salvage value of the property, computed on the same basis on which the fair value has been established, would be less than $5,000,000.00, and it may be as high as $10,000,000.00. However, the record is silent on any basis for making an estimate of salvage value, and we merely note the large possibilities of this item, as the Commission did in its opinion.

Mr. Hagenah, for the protestants (R. 480), indicates that this salvage value would be considerable, though he does not undertake to fix it.

(2.)—INTEREST ON RESERVE FUND.

Of far greater importance than the matter of salvage value is the fact that the plaintiff will secure the Commission's allowance for depreciation and amortization in installments currently, and that it can either use this reserve in its business, if such business requires the same,

or it can withdraw this fund from the business, if it is not necessary thereto. Plaintiff's records show that the amount of its reserve is less than the amount provided by the Commission's former allowances for amortization. The difference manifestly has been withdrawn.

It is approved practice in rate cases to allow for the interest which accumulates on any amortization reserve fund.

Re Wisconsin Telephone Company (Wis.) P. U. R. 1926B, 628.

Re Southern California Telephone Company (Calif.) P. U. R. 1925C, 627.

Re Coos & Curry Telephone Company (Ore.) P. U. R. 1924E, 344.

Re Coast Valley Gas & Electric Company (Calif.) P. U. R. 1924C, 40.

Re Illinois Commerce Commission vs. *Chicago Telephone Company* (Ill.) P. U. R. 1924A, 213.

Re Northwestern Bell Telephone Company (S. Dak.) P. U. R. 1924E, 274.

Re Great Western Power Company (Calif.) P. U. R.) 1923C, 545.

Re Kootenai Power Company (Idaho) P. U. R. 1923A, 704.

Re Idaho Power Company (Idaho) P. U. R. 1923B, 52.

Re Meade, C. H., Coal Company vs. *Appalachian Power Company* (W. Va.) P. U. R. 1923E, 221, 226.

Re Frankfort Heating Company (Ind. P. S. C.) decided September 10, 1919.

Re Bay City Water Company (Ore. Com.) P. U. R. 1924E, 653.

Re Kootenai Power Company (Idaho) P. U. R. 1923C, 159.

Mr. Hagenah testified that interest should be calculated on the reserve (R. 456, 457 and 458). The West Virginia record, being reduced to narrative form, does not bring out the thought as clearly as does the Kentucky record relating to the same question, where the full transcript of his testimony in this proceeding is copied. Mr. Hagenah's explanation appears at page 936 of the Kentucky record:

> "Now as to the first group of purely depreciation reserve, just as we find that reserve in all other continuing public utilities. There it is for the purpose of making replacements. You cannot make replacements every year on every class of property. Some has a long life and some has a short life. Assuming that the reserve provision is made with every possible care and accuracy, there must always be and will always be, in the strictly depreciation reserve, a credit balance. As to that credit balance which the company is using in its business, or, for that matter, investing in the bank or any other place, the interest which it earns should be credited to depreciation reserve, and to that extent reduce the charge against the public for operating expenses."

Mr. Engal pointed out, in criticism of the company's book allowance, that it did not provide for interest on the accumulated depreciation reserve balance (R. 409).

The importance of this factor is indicated by the following table, which shows that if interest is allowed at the low rates of 4, 5 and 6% annually compounded, the valuation which can be amortized out of the Commission's annual allowance is far in excess of plaintiff's contentions as to the fair value. (18 years used as life of property.)

	Interest calculated at 4% per year	*Interest calculated at 5% per year*	*Interest calculated at 6% per year*
Balance in reserve on December 31, 1923 (14,028,737)	$28,410,509.97	$33,761,827.82	$40,042,772.54
Annual Net Allowance of $1,696,074	43,496,518.21	47,714,606.76	52,418,274.51
Total Fair Value which would be amortized	$71,907,028.18	$81,476,434.58	$92,461,047.05

The District Court took into account the interest which the reserve would earn in reducing the Commission's allowance of 4.15% for amortization to 3.65% (R.1235, 1236).

As already indicated, besides the factors of salvage value and the interest accumulations, the Commission did not consider specifically any of the depreciation reserve accumulations for the period from 1909 to 1916, seven years, and it did not consider specifically that a great many of the minor renewals of the company are charged to maintenance.

The Commission, therefore, in making its depreciation and amortization allowance, used an amount which was far in excess of the amount necessary to amortize the fair value of the property determined by it and, in fact, the amount allowed was more than sufficient to amortize the fair value claimed by the plaintiff.

(B)—DEPRECIATION AND AMORTIZATION SHOULD BE CALCULATED ON COST

Protestants submit that the present fair value of the property is not the proper basis on which the depreciation and amortization should be calculated.

Knoxville v. *Knoxville Water Co.*, 212 U. S. 1, 13.

The reasons for calculating the depreciation and amortization allowance on investment cost are summarized by Jirgal, as follows (R. 401):

(1) The purpose of the depreciation and amortization reserve is to keep the investment intact, and not to return to the investor the cost of reproduction at any given valuation date.

(2) The original cost is the common basis for calculating depreciation and depletion in order to compute profit in all industry (R. 402).

(3) The applicant may use the difference between the allowance for depreciation and amortization computed on fair value and such allowance computed on cost, as additional profit available for dividends, so that the Commission's allowance for these items on this basis is in effect giving the company an additional return over and above the eight per cent found by it as reasonable (R. 402).

(4) The classification of accounts adopted by Public Service Commissions generally, and by the West Virginia Public Service Commission for natural gas companies, provides that depreciation shall be calculated on original cost. The following is an extract from the West Virginia classification relating to natural gas companies:

> "In determining its rate of depreciation the utility shall, in the case of those structures and items of equipment that can be satisfactorily individualized, provide for each such structure and item

of equipment an amount which will through regular accumulation insure at the time such structure or item of equipment goes out of service a reserve therefor equal to the *original money cost* thereof less salvage recovered thereon. In the case of those structures and items of equipment that cannot be satisfactorily individualized the utility shall keep such structures and equipment in efficient condition through repairs and shall treat all renewals or replacements of parts thereof as repairs." * * * and,

"Credit to this account and charge to Amortization of franchises, patent rights and licenses accounts those amounts which, through regular application, will provide at the expiration of the lives of the utility's limited franchises, patent rights and licenses, limited rights of way, and *leaseholds*, a reserve equal to their *original money cost*." (R. 402-3.)

(5) The company loses nothing by this method of calculating depreciation and amortization, because the difference between the original cost of property retired from service and the cost of the property by which it is replaced, is added to its capital account. (R. 403.)

(6) Public utility mortgages commonly provide for this basis of withdrawing additional bonds from time to time. (R. 403.)

(7) To compute depreciation on any other basis than original cost results in a fluctuating basis for computation which cannot be used practically by the company in its records every time the price level changes. (R. 404.)

Mr. Hagenah takes the same view with respect to the basis for calculating depreciation. He points out that the purpose of the reserve is to maintain intact the integrity of the investment, and, further, to protect the investor in

the actual cost of the property he has devoted to the public use. He further states that the utility is not to be protected on any such speculative basis as is brought about by changes in the price level. He brings out very forcibly that the reserve cannot be applied on any uncertain or fluctuating principle, and that appreciation should not be retired through a depreciation reserve which is, in effect, what is done if cost of reproduction is used as a basis for calculating depreciation and amortization allowances.

The protestants, therefore, submit that the Commission's allowance for depreciation and amortization is excessive and unreasonable; that it is more than is required to keep the investment of the plaintiff intact; that instead of allowing $1,899,537, it should have allowed not in excess of $1,399,227 (5.3% of book cost R. 1161). This appears as follows:

Balance at December 31, 1923 of Depreciation and Amortization Reserve allowed by Commission in previous rate cases	$14,028,737
Annual Allowance of $1,195,764 ($1,399,227 less annual expenses of $203,463 based on average of last 14½ years)	21,523,752
Total investment which would be amortized	$35,552,489

The book cost of the entire property as of December 31, 1923, was only $26,288,912 (R. 1067) including both depreciable and non-depreciable property, so that the above allowance is more than ample. Retirements of property since 1909 were only $2,950,222.32 (R. 1145).

If interest at 4, 5 and 6% is computed on these items, as we did upon the allowances made by the Commission (ante) there results an amount in excess of any value of plaintiff's property reasonably supported by the evidence, appears from the following table:

	Interest Calculated at 4% per Year	*Interest Calculated at 5% per Year*	*Interest Calculated at 6% per Year*
Balance in Reserve December 31, 1923 ($14,028,737)	$28,410,569.97	$33,761,827.82	$40,042,772.54
Annual net allowance of $1,195,764	30,665,861.63	33,639,693.22	36,955,867.25
Total Fair Value which would be amortized	$59,076,371.60	$67,401,521.04	$76,998,639.79

Commissioner Divine (R. 137), held that depreciation and amortization should be based on cost. Judge Hickenlooper held that that part of the allowance which represents amortization (termed by him "depletion"), should be computed on "investment value".

This question has been before the Commissions of many of the states. While some (frequently because of the absence of proof of original cost) hold with Chairman Stathers that amortization should be computed upon fair value, we believe that the majority are in accord with Judge Hickenlooper and Commissioner Divine that investment cost is the true basis for calculation. Among

the many cases so holding, the following are representative:

Re Cumberland & Allegheny Gas Co., decided by W. Va. P. S. Com. Oct. 27, 1927.

Re Georgia Ry. & P. Co. v. Ry. Com. (U. S. D. C.) P. U. R. 1925A 546, 593.

Re Springfield Gas & Electric Co. (Ill.) P. U. R. 1919 B 746;

Re Southern Pacific Co. (Nev.) P. U. R. 1920 F 725, 769;

Re Coast Gas Company, (N. J.) P. U. R. 1923 A 349;

Re Public Service Railway Co., (N. J.) P. U. R. 1921 D 953;

Re Bronx Gas & Electric Co. v. P. S. C., (N. Y. Sup. Ct.) P. U. R. 1923 A 255;

Re Wisconsin-Minnesota Light & Power Co., (Wis.) P. U. R. 1920 D 428;

Re Philippine Ship Owners' Assn., (P. I.) P. U. R. 1921 C 536;

Re Champaign & Urbana Water Co., (Ill.) P. U. R. 1919 E 798;

Re St. Joseph Water Co. (Mo.) P. U. R. 1924 B 338;

Re Baird v. Burleson, (N. Y., 2nd Dist.) P. U. R. 1920 D 529;

Re LaPorte Gas & Electric Co., (Ind.) P. U. R. 1921 A 824

Re Commonwealth v. Newport News L. & W. Co. (Va.) P. U. R. 1923D 91.

Protestants claim that the original cost is the only basis which will equitably spread over the life of the property the total amount to be depreciated or amortized by equalizing the annual allowances, and that an annual allowance of $1,399,227 is more than sufficient to keep the investment intact. In fact it is more than sufficient to

return to the plaintiff any fair value which may reasonably be found from the evidence in this case.

The Court can hardly take seriously plaintiff's contention (Brief, p. 55), that the Commission provided for the retirement of but $20,981,252 worth of property. The amount allowed by it, $1,809,537, is $500,000 in excess of what it would have been had the percentage (5.27) been applied to the book cost.

4.—The Propriety of Including Lease Rentals and Lease Expenses in Operating Costs.

The delay rentals and leasehold expenses expended in the year 1923 to preserve plaintiff's gas leases amounted to $589,186 (R. 1276). This amount was included in the operating expenses for that year and deducted from earnings. The question as to the propriety of including these items in operating expenses has been referred to in another part of this brief. It has been noted already that the only basis on which confiscation can be claimed in this case is on the theory that the full value of the gas rights contended for by the plaintiff should have been allowed by the commission. It will appear later that there was practically no dispute before the Commission as to the value of the physical property, the going concern value, or the working capital. If the entire amount of appreciation in the gas rights claimed by the plaintiff is necessary in order to prove confiscation, and it be assumed for the present that it is entitled to such full appreciation, then we submit it cannot equitably include in the operating expenses any item which is in the nature of a carrying charge on the element of property for which such full appreciation is claimed. To allow the items of delay rentals and leasehold expense to remain in the operating expenses is to charge the consumers for the full appreciation in plaintiff's property, and in addition to

assess them with the cost of acquiring and holding the property. Plaintiff occupies the anomalous position of one who, after contracting to sell property to another and collecting part of the purchase price from the purchaser in possession, attempts to continue to collect rent for the same property as if it were still his own.

If the consumers pay the carrying charges in addition to bearing the depreciation, amortization and fair return, they are not only paying a fair return on the appreciated value but are also permitting the plaintiff to charge them with the cost of the appreciation.

The protestants, in their exhibits before the Commission, did not deduct rentals and carrying charges for the reason that they claimed that the book cost of the leaseholds, and not their appreciated value, should be taken as the fair value thereof. However, upon the argument in the District Court, they presented two exhibits, "Jirgal Exhibit 3 J C No 1" (R. 1161), and "Jirgal Exhibit 3 J C No 2" (R. 1162), which showed the net earnings before deducting leasehold rentals.

The District Court noted that the statements contained in its opinion relative to the net earnings available for return and amortization were subject to the reservation as to the right of the plaintiff to include in operating expenses "the payment of delayed rentals to preserve its leases or options in unoperated territory." (R. 1271.)

Protestants submit that it appears that the net earnings of the plaintiff from its property as a whole available for return on investment is not less than the amount shown by the protestants' witness Jirgal, in "Jirgal Exhibit 3 J C No 1" (R. 1161) or $5,694,229. This amount, when capitalized at 8%, gives a value of $71,177,000. There has been shown (ante p. 91) the effective valuations arrived at by a capitalization of the earnings which result from the rates approved by each of the Commissioners and the District Court as compared with the value which they found by considering the various elements of

physical and intangible property. For convenience this comparison is tabulated at this point showing the result of excluding delay rentals from operating expenses for reasons above disclosed:

	Value arrived at by Capitalizing Earnings on Percentages found Reasonable for Return or for Return Depreciation and Amortization	*Fair Value Determined*
Public Service Commission of West Virginia:		
1 By Chairman Stathers:		
(a) On Basis of including delay rentals in operating expenses	$67,000,000.00*	$35,999,969.14
(b) On Basis of excluding delay rentals from operating expenses	74,300,000.00*	35,999,969.14
2 By Commissioner Divine:		
(a) On Basis of including delay rentals in operating expenses	65,000,000.00*	40,165,000.00
(b) On Basis of excluding delay rentals from operating expenses	72,300,000.00*	41,165,000.00
District Court for Southern District of West Virginia:		
3 On Basis of Adjusting Parent Company rates to comparable wholesale rates	58,858,872.27**	40,307,311.39
4 On Basis of Adjusting Parent Company rates to rates comparable with those applying to West Virginia retail consumers	53,295,228.84**	40,307,311.39

5. Same as 3 except delay rentals as deducted from operating expenses	67,900,000.00***	40,307,311.39
6. Same as 4 except delay rentals are deducted from operating expenses	58,308,000.00***	40,308,311.39

*Arrived at by capitalizing net earnings at 8%.

**See Judge Rose's Opinion R. 1239.

***Approximately $5,000,000 added—See Judge Rose's Opinion R. 1271 and 1272.

In conclusion upon this point, we respectfully submit that regardless of the merits of the plaintiff's criticism as to the valuation of the different classes and items of its property by the Commission, both physical and leaseholds, the net earnings from this property allowed by the Commission when capitalized on a reasonable and proper basis produce a capital value approximately equal to that claimed by the plaintiff and in excess of any value of its property that can be predicated upon the record in this suit. If this be true, there is no confiscation.

VI.—REASONABLE RETURN

Plaintiff does not deny the reasonableness of the return of 8% allowed by the Commission. (R. 130.) Eight per cent or less has been approved in many natural gas cases.

Columbus Gas Co. v. Columbus, 17 Fed. (2d) 630, P. U. R. 1927 C. 639 ..... 7.07%

Re Jackson County Light, Heat & Power Co. (Mo.) P. U. R. 1926 D. 737 ..... 8%

Re Crystal City Gas Co. (N. Y. P. S. C.) P. U. R. 1925 E. 91 ..... 8%

Village of Antioch v. Boyles (Ohio P. U. C.) P. U. R. 1925 E. 152 ..... 8%

Re Peoples Natural Gas Company, (P. S. C. N. Y.) P. U. R. 1916 A 349 8%

Amhurst v. Snyder Gas Company, (N. Y. P. S. C.) P. U. R. 1921 D 539 8%

Re Fuel Gas Company, (Ind. P. S. C.) P. U. R. 1919 C 879 7%

Re Indiana Gas Light Company, (Ind. P. S. C.) P. U. R. 1921 E 441 7%

Re Rockford Gas Light & Coke Co., (Ill.) P. U. R. 1920 E 641 7.3%

Re Monarch Gas Company, (Ind. P. S. C.) P. U. R. 1920 C 960 7%

Re Sheridan Gas, Oil & Coal Co., (Ind. P. S. C.) P. U. R. 1921 E 7%

Re Richmond Light, Heat & Power Co., (Ind. P. S. C.) P. U. R. 1917 B 300 7%

Okmulgee Gas Co. v. Corp. Com. (Okla. Sup. Ct.) 220 Pac. 28 8%

Municipal Gas Co. v. Wichita Falls (Tex. R. R. Com.) P. U. R. 1924 B 410 8%

Billings v. Billings Gas Co. (Mont. P. S. C.) P. U. R. 1924 C 217 6.1%

Consumers' Gas Co. v. Corporation Com., (Okla. Sup. Ct.) 219 P. 126 8%

Re Billings Gas Company, (Mont.) P. U. R. 1925 B 363 8%

Oklahoma Nat. Gas Co. v. Corp. Com., (Okla. S. C.) 216 P. 917 8%

Landon v. Public Utility Com., 234 Fed. 152, P. U. R. 1917 A 120 8%

Re Utility Gas Co., (W. Va.) P. U. R. 1726 A 57 8%

Re Point Pleasant Natural Gas Co., (W. Va.) 1927 B 805 8%

VII.

THE FAIR VALUE OF PLAINTIFF'S PROPERTY

1.—Physical Property

The findings of the value of the physical property, that is, the property exclusive of gas rights, working capital and going concern value, in this case were as follows:

By the Commission	
Commissioner Stathers	$25,000,000.00
Commissioner Divine	26,000,000.00
By the Courts	
Judge Rose	26,000,000.00
Judge Hickenlooper	26,283,844.00

The evidence before the Commission and the Courts on this point included the cost of reproduction new as estimated by plaintiff's witness Uebelacker and protestants' witness Hagenah, the cost of reproduction new less accrued depreciation also estimated by these two witnesses, the estimated historical cost submitted by Mr. Uebelacker for the plaintiff, and the actual book cost of the property as determined from the plaintiff's books by Mr. Jirgal for the protestants.

Upon the hearing in the District Court Mr. Hagenah submitted an estimate of the cost of reproduction new, arrived at by the application of the index numbers of the United States Bureau of Labor to the actual book cost. (R. 484-486.)

(A)—COST OF REPRODUCTION NEW OF PHYSICAL PROPERTY

As stated, an estimate of the cost of reproduction new (undepreciated) was submitted by Mr. Uebelacker, which, except as to overheads, was accepted by Mr. Hagenah. Their estimates of the value of the several items of plaintiff's property, including overheads, are shown below:

	As found by Mr. Uebelacker (R. 537-538)	*As found by Mr. Hagenah* (R. 1166-1168)	*Difference*
Production System Exclusive of Leaseholds	$12,574,788.00	$12,575,511.00	$ 723.00
Transmission System	13,467,823.00	13,468,485.00	662.00
Distribution System	3,269,363.00	3,269,366.00	3.00
General Property	679,140.00	679,140.00	
TOTAL	$29,991,114.00	$29,992,502.00	$ 1,388.00
General Overhead Charges	7,063,311.00	5,398,650.00*	1,664,661.00
Total Reproduction Cost Exclusive of Leaseholds	$37,054,425.00	$35,391,152.00	$1,663,273.00

*18% of physical property. (R. 428.)

See "Uebelacker Exhibit No. 1" (R. 536) and "Hagenah Exhibit No. 1" (R. 1163).

The Commission properly found that there was no difference between the plaintiff and protestants in the matter of the reproduction cost new, exclusive of overheads.

(B)—COST OF REPRODUCTION NEW LESS DEPRECIATION

Both Mr. Uebelacker and Mr. Hagenah, after estimating the cost of reproducion of the physical property, proceeded to estimate the amount of accrued depreciation in the same, and as a result of a study of the property they concluded that such cost of reproduction new less accrued depreciation as of December 31, 1923, was as follows:

	As found by Mr. Uebelacker (R. 537-538)	*As found by Mr. Hagenah* (R. 1166-1168)	*Difference*
Production System (Exclusive of Leaseholds)	$ 7,830,400.00	$ 7,389,894.00	**$ 440,506.00**
Transmission System	11,154,326.00	9,713,397.00	**1,440,929.00**
Distribution System	2,694,806.00	2,633,268.00	**61,538.00**
General Property	594,742.00	576,305.00	**18,437.00**
Total Specific Cost	22,274,274.00	$20,312,864.00	**$1,961,410.00**
General Overhead Charges (depreciated)	6,357,046.00	3,656,316.00	**2,700,730.00**
Total Reproduction Cost less Depreciation (Exclusive of Leaseholds)	$28,631,320	$23,969,180.00	**$4,662,140.00**

It will be noted that in the case of these two estimates there is again a decided difference as to the amount of overhead expense which should be applied to the specific cost of construction, and that in addition there is a very material difference in the estimates of the two engineers as to the amount which should be deducted for accrued depreciation.

These items will be taken up in order.

(1)—OVERHEAD CHARGES:

Mr. Uebelacker not only included considerable percentages for direct overheads, but also included excessive amounts for general overheads. The direct overheads testified by him as having been included (R. 517) were as follows:

Liability insurance	1%
Loss and use of tools	1½% to 2%
Field supervision	½% to 8%
Time keeping	1%, and
Contingencies	2% to 5%

The general overheads included by him are given below:

	Production System	*Transmission System*	*Distribution System*	*General Property*
Engineering and Superintendence	2½%	7%	3%	3%
Administration	2	2	2	2
Interest (during construction)	8	8	8	8
Preconstruction Costs	2½	2½	2½	2½
Legal Expenses	1½	1½	1½	1½
Insurance and taxes	1	1	1	1
Cost of Financing	4	4	4	1
	21½%	26%	22%	22%

The Commission approved Uebelacker's calculations of the overheads:

> "If there was any doubt as to what Mr. Uebelacker meant by 'cost of financing' after he first testified in this case, that doubt was removed by him in 'Uebelacker Exhibit No. A', as was also the

matter of interest during construction. Further, other testimony in the record sustains Mr. Uebelacker in his figures as to cost of financing and interest during construction, both of which are allowed and considered by the Commission in connection with Mr. Uebelacker's estimate of reproduction cost new in this property."

(Opinion of Commission, R. 88.)

Mr. Hagenah allowed for overheads $5,398,650 (undepreciated), being 18% of the physical property.

The protestants insist that this overhead item, when properly depreciated as done by Mr. Hagenah, is not in excess of $3,656,310. As previously stated, the difference between the witnesses as to overheads rests upon two items, cost of financing and interest during construction.

(a)—*Cost of Financing.*

Mr. Uebelacker allows 4% for cost of financing, which he defines as follows:

"The cost of financing includes the expense involved in assembling the necessary capital for the enterprise and must not be confused with bond discount which has not been considered in the estimates. This expense is that which would be incurred in the floating of securities and as the interest rate provides for the current market return upon the investment there is no discount to be considered."

(Uebelacker Ex. No. 1, R. 519.)

Mr. Hagenah, on the other hand, (R. 475) rejects the item of financing cost as a capital charge on the ground that such an expense "should be distributed over the period for which the financing was incurred." Illustrating his position, he says that if some one is hired to sell the securi-

ties, or because of their reduced interest rate they are sold at less than par, such additional cost of money should be amortized over the life of the securities, whether the cost be in the nature of discount, or as Mr. Uebelacker contends, merely sales cost.

In short, Mr. Hagenah makes the same answer to Mr. Uebelacker's attempted distinction between the expense of assembling capital and bond discount as the New Jersey Board of Public Utility Commissioners made to similar testimony offered by Ford, Bacon and Davis, of which firm Mr. Uebelacker is a member:

> "Discounts on bonds and commissions are always very closely allied. Generally speaking, the system of accounts adopted by this board does not distinguish between the two charges but provides that all discounts and commissions shall be excluded from the capital account and amortized out of the earnings over a term of years. In other words, bond discount and commissions are regarded as another form of interest rates.
>
> "The board finds and determines that all amounts claimed for commissions and discounts in the sale of securities should be excluded in determining fair value and further finds that due consideration will be given to these claims in determining the fair rate of return."
>
> *Re Public Service Ry Co.*, P U R 1921 D 593

On the same subject the Supreme Court of Appeals of West Virginia said:

> "One item of $193,782.85 for financing improvements and betterments, shown on page 10 of Jirgal's Exhibit No. 1, and deducted by him from the total

of the book cost of the gas property, appears to represent discount and expenses on the sale of the company's securities, certain bonds sold in August, 1921. This deduction was proper. All the authorities seem to agree that discount on securities is not a proper charge to capital but is simply an adjustment of interest. *1 Whitten on Pub. Ser. Corp.*, Sec. 322, p. 273. The discount should be amortized during the life of the securities."

Charleston v. Public Service Commission, 95 W. Va. 91, 130, 120 S. E. 398.

Call it "bond discount" or the "expense of the sale of the securities" or, as Mr. Uebelacker says, "the expense involved in assembling the necessary capital", the thing itself is the same, viz., an expenditure which reduces the net amount realized from the securities of the enterprise, differing in no sense from the interest charges, as explained by Jirgal:

"In no company's books is that (cost of financing) accounted for as construction costs, that is accounted for as nothing more than bond discount and expense, what is covered if the company puts in anything and what it puts in at the total discount. That is, the difference between par value and the amount which it gets from its securities."

(Jirgal, R. 407.)

The question seems to us to have been definitely disposed of by this court in the Galveston case as follows:

"The other item included by the master in determining base value, but disallowed by the court, is $67,078 for brokerage fees. There is no evidence that any sum was in fact paid as brokerage, and there was included, as above shown, the sum of $73,281 for organization and business management

in calculating the historical reproduction cost. The finding of the master rests upon testimony that bankers customarily get, in some form, compensation equal to 4 per cent on the money procured by them for such enterprises. But compensation for broker's services is often paid in the lessened price at which they take the company's securities, and is thus represented in the higher rate of interest or dividend paid on the money actually received by the company as capital. The reason given by the master for including the allowance for an assumed brokerage fee is that a brokerage fee is a 'normal incident of large industrial investments and has not been amortized', since 'the record shows that the plant has been operated at a loss'. If base value were to be fixed by the money expended, brokerage fees actually paid might with propriety, be included, as are taxes paid pending construction. But as the base value considered is the present value, that value must be measured by money, and the customary cost of obtaining the money is immaterial. We cannot say that the court erred in refusing to include in base value an allowance for hypothetical brokers' fees."

Galveston Electric Co. v. *Galveston*, 258 U. S. 388, 66 L. Ed. 678, 42 Sup. Ct. 486.

See Vol. I, Spurr, Guiding Principles of Public Utility Regulation, pp. 468-469.

Colo. Power Co. v. *Halderman*, 295 Fed. 178.

In their brief below counsel for plaintiff said that to Mr. Uebelacker "cost of financing" means the cost to be paid to a reputable broker "for inducing his clientage to invest in the securities', an estimated and speculative brokerage fee, precisely the thing condemned by this court, in the opinion of Mr. Justice Brandeis. As against

the decision of this court plaintiff in its brief filed here cites two commission cases from Utah. (Appellant's brief, p. 42.)

(b)—*Interest During Construction*

Counsel for plaintiff argue that Mr. Hagenah's opinion that 7% is a sufficient allowance is not based upon any "personal experience in the construction of a plant like plaintiff's." (Brief, p. 42.) On the other hand, it is claimed that Uebelacker's testimony that 8% should be allowed is based not upon opinion but upon actual experience in the construction of a similar plant. We challenge the statement that Uebelacker's dictum, based largely on his experience in the construction of a single plant in northern Alberta, Canada, is controlling in this matter. (R. 205.)

Mr. Hagenah testifies that this company, with the enormous quantities of gas and the vast business available to it, "could finance itself on a year to year basis with 7 per cent money", that it could do this while building its plant, adding its consumers as its transmission lines are extended from city to city. As to many classes of property, the construction period would not exceed six months, and whether the company is assumed to borrow its construction funds at 6 per cent, 7 per cent, or at 8 per cent, an allowance of 7 per cent on the entire property is most liberal. (R. 476.)

Experience the country over, as reflected by the estimates approved by courts and commissions, uniformly supports the conclusion that an allowance of 7 per cent to cover the cost of interest during construction is indeed liberal.

> "In valuing the plant for purposes of arriving at a rate base, a charge for interest upon capital during construction is proper. *Ohio Utilities Co. v. Public Service Commission*, 267 U. S. 359, 45 Sup. Ct. 259, 69 L. Ed. 656. It is also true that in some natural gas projects the highly speculative

nature of the investment would necessitate high interest rates. But in determining what rate of interest should be applied in any specific case the nature of the business involved must be considered. Here the element of speculation is reduced to a minimum. The properties are proved and producing, and were so when the company was organized. The markets are established. The company is the subsidiary of two other large, substantial, successful corporations. There are not and never were, any of the elements of the speculative, 'wildcat' venture. **We are of the opinion that the 7 per cent interest rate conceded by the witness Hagenah, for the protesting municipalities, is sufficient, even generous.**"

United Fuel Gas Company v. R. R. Com. of Ky. 13 Fed. (2d.), 510, 520.

In the following cases allowances for interest during construction ranging from three to seven per cent were approved:

State Journal Prtg. Co. v. Madison G. & El. Co., 4 Wis. R. C. 501.

Re Mountain States Tel. & Tel. Co., (Colo.) P. U. R. 1917 B 198.

Re Mountain States Tel. & Tel. Co., (Idaho), P. U. R. 1921 B 738.

Columbia v. Watts Eng. Co., (Mo.) P. U. R. 1915 B 921.

Re Petaluma & S. R. R. (Cal.) P. U. R. 1915 B 742.

Re San Francisco-Oakland Term. Ry. (Cal.) P. U. R. 1915 D 44.

Metropolitan Trust Co. v. Houston & T. C. R. Co., 90 Fed. 683.

Re Public Service R Co (N J) P U R 1921 D 593

Among the many cases cited by Spurr in his chapter on blanket overhead allowances there is but one which permits more than 20% for such charges (Vol 1, pp 426-443) It involved the construction of a hydro-electric plant where the California Commission allowed 23½% for three year construction, *the unit costs not having included any item for contingencies or omissions or for engineering and superintendence*

There is, of course, no occasion in the present case to make provision for any such omission in the unit cost estimates, as will clearly appear from Mr Uebelacker's testimony

> "In building up unit prices for the installation of pipe lines, compression stations, meters, and, in fact, in the acquisition of all materials, an allowance was made to cover certain direct overheads which are part of the direct cost of the property in place
>
> "Based upon labor in all installations, an allowance was made for liability insurance at 1 per cent, loss and use of tools from 1½ to 2 per cent, field supervision from ½ to 1 per cent in the case of miscellaneous structures to 8 per cent in the installation of compressing station equipment, timekeeping at 1 per cent on pipe lines and miscellaneous structures, and contingencies from 2 per cent in the case of compressing stations and the smaller miscellaneous accounts to 4 and 5 per cent in the case of gathering, transmission and distribution lines

"On materials, those direct overheads are ½ of 1 per cent for purchasing, from ½ to 4 per cent for warehouse handling and from 2 to 5 per cent for contingencies.

"A fee or contractor's profit of 10 per cent was allowed on the cost of all buildings and structures. The contingencies cover unforseen costs in construction and such other costs as are not apparent in completed construction.

"These percentage allowances were determined from a study of the records of the Company in actual installations and from similar experience of other companies."

("Uebelacker Exhibit No. 1", R. 516-517.)

All of these direct overhead costs were included by Mr. Uebelacker in addition to the general overhead charges which are here attacked.

In two instances the Maryland Commission allowed 19.9 per cent and 17.67 per cent in a water rate and telephone rate case, respectively. In one case the New York Commission allowed 20 per cent representing "actual labor and material costs." *Davis v. Penna Gas Co.*, P. U. R. 1921 B 342, and in another a similar allowance for engineering, supervision and contingencies where the record failed to show the amount expended. *Re Bronx Gas & E. Co.*, P. U. R. 1916 A 440. Showing the trend of judicial thought, we append the following list of commission decisions, showing allowances for overheads.

15 Per Cent Allowed for Overheads

Re Penobscot Water Co., (Me.) P. U. R. 1923 B 771.

Re Lansing Fuel & Gas Co., (Mich.) P. U. R. 1921 D 387.

Re United Railways Co. (Mo.) P. U. R. 1923 D 759.

Re Trenton Gas & Elec. Co. (Mo.) P. U. R. 1923 D 314.

Re Platte County Tel. Co. (Neb.) P. U. R. 1922 D 303.

Mantau Tship. v. New Jersey Gas Co. (N. J.) P. U. R. 1916 C 163.

Belott v. Belott Water & Gas Co. (Wis.) P. U. R. 1915 B 1005.

14 Per Cent

Re Portland E. L. & Power Co. (Ore.) P. U. R. 1916 D 976.

13.5 Per Cent

Petersburg Gas Co. v. Petersburg (Va.) P. U. R. 1923 B 259.

13 Per Cent

Re Moundsville Water Co. (W. Va.) P. U. R. 1922 B 28.

Re Grand Rapids (Mich.) P. U. R. 1923 C 453.

Westminster v. Pub. Util. Co. (Md.) P. U. R. 1919 E 508.

Re Springfield Gas & Electric Co. (Ill.) P. U. R. 1920 A 446.

Peck v. Indianapolis L. & H. Co. (Ind.) P. U. R. 1916 B 445.

12 Per Cent

Re Capital City Water Co. (Mo.) P. U. R. 1918 D 561.

Fargo v. Union L. H. & P. Co. (N. D.) P. U. R. 1920 A 764.

Illinois Commerce Commission v. *Chicago Tel. Co.*, (Ill.) P. U. R. 1924 A 213;
Patterson v. *Hughes Electric Co.*, (N. D.) P. U. R. 1921 A 1
Commercial Club v. *Citizens Gas & Fuel Co.*, (Ind.) P. U. R. 1916 E 1
Re Falls Light & Power Co., (Wis.) P. U. R. 1916 D 151

10 Per Cent

Dunn v. *Rutland E. L. & P. Co.*, (Ut.) P. U. R. 1923 C 316

We conclude our discussion of overheads with a reference to Judge Rose's views upon the allowance made by Mr. Uebelacker. (R. 1241.)

Judge Rose first referred to the reproduction cost new of plaintiff's physical property not including going value or working capital, estimated by Mr. Uebelacker at $37,054,425. He then took the book cost of the same property and with the index figures of the Department of Labor, translated that book cost into dollars of the year 1923, and set the amount so found, $24,546,309, against the reproduction estimates of the plaintiff. Allowing liberally for the possibility that such materials as went into plaintiff's plant increased in cost at a higher rate than has the average of all commodities, he found that the difference between the actual cost of the plaintiff's plant in dollars of 1923 and the amount its expert witnesses say would be required to reproduce it, is no less than $8,000,000. He then pertinently inquires whence comes this difference.

"We are persuaded that it is almost altogether due to the liberality with which the witnesses estimate the outlay which in reproduction would be

made for direct and general overheads. The latter alone are figured at $7,063,311. There is no possible question that in almost all of these rate cases the overhead charges included in the estimated cost of reproduction greatly exceed any sum that the utility actually paid out for such purposes. A large and widely distributed plant is ordinarily a growth extending over many years. Its property is managed by its officers and its construction is financed in installments. The large overheads estimated by the experts are simply not incurred. The plaintiff's expert based his calculation concerning them largely upon the experience he had in the erection of other plants, especially one in Alberta, Canada. He apparently ignored the history of the construction of the plaintiff about which he was testifying, *for it is certain that no such expenditures for overheads were in fact found necessary by it.* The writer of this opinion had on another occasion to give some consideration to the great discrepancy there almost always is between what the experts, in making up a reproduction cost estimate must be expended for overhead and the sums the particular utility actually laid out for such purposes. *Chesapeake & Potomac Telephone Co. of Baltimore City* vs. *Whitman*, 3 Fed. (2d) 938, 967, et seq.

(R. 1242; 14 Fed. (2d) 209, 214.)

(2)—ALLOWANCE FOR ACCRUED DEPRECIATION.

Mr. Uebelacker and Mr. Hagenah agree that accrued depreciation should be deducted from the reproduction cost new of the physical property, including the allowance for overheads. They differ as to the theories of calculating such depreciation. The Commission has this to say of their positions:

"As indicated herein, in arriving at the reproduction cost of the physical property, less depreci

> tion. Mr. Uebelacker reaches the extent or amount of deterioration or depreciation through what is called the 'observed depreciation method'. Mr. Hagenah (Hagenah Ex. No. 1) disapproves of this method and in its place offers a combination of 'the observed depreciation method' and 'the amortization rule', explaining on page three of said exhibit in the following language: 'In all cases where the normal life of the property will be cut short by the exhaustion of the gas reserves, the present condition has been ascertained by the application of the amortization rule; but in all other respects the facts as found by Ford, Bacon and Davis have been accepted'." (R. 87.)

It then proceeded to adopt in full the findings of Mr. Uebelacker, rejecting the "theoretical" and "speculative" procedure of Mr. Hagenah.

With the exception of items comprising the "Gas well construction" acount, with reference to which "it was taken as a reasonable assumption that the wells were in a condition of depletion as was indicated by the decline in rock pressure" (R. 510), Mr. Uebelacker employed the observation or inspection method throughout. That is, he made no deduction for depreciation other than that which was apparent to him from the physical condition of the property at the time of his inspection.

Mr. Hagenah defines his plan clearly and concisely in his Exhibit No. 1 (R. 1164-1165), introducing his explanation as follows:

> "Obviously, the useful life of a large part of the company's property is limited to the life of the natural gas fields, which latter period the engineers have found to be approximately 18 years. The per cent condition of the property was determined by the above engineers (Ford, Bacon & Davis) from an inspection of the physical property, in

which consideration was apparently given only to its physical condition as of the inventory date. This method ignores the limitation on the use of the property which the life of the field imposes, with the result that since the investment must be amortized over the life of such field, the present worth of the property affected thereby should be determined with regard to such diminishing value, especially when such loss in worth is being met through operating charges. *Because of this fact the ordinary rules for determining the measure of depreciation by inspection do not apply.*"

His view is sustained by a number of authorities, including

Okmulgee Gas Co. v. Corp. Com. (Okla. Sup. Ct.) 220 Pac. 28.

Re Associated Telephone Co. (Ind. P. S. C.) P. U. R. 1927 C 577.

Columbus Gas & Fuel Co. v. Columbus, 17 Fed. (2d) 630.

Chesapeake & Potomac Tel. Co. v. Virginia (Va. Sup. Ct.) P. U. R. 1927 B 484.

Re Missouri Union Tel. Co. (Mo. P. S. C.) P. U. R. 1926 A 842.

Re Plainfield Union Water Co. (N. J. Board) P. U. R. 1924 D 480.

Mr. Hagenah divided the property into two classes: that class of property which, like the property of other utility companies, must be renewed from time to time, and that class of property, the life of which is terminated by the exhaustion of the gas fields. For the first class he used the inspection method, just as Mr. Uebelacker did, and accepted the latter's figures as to the amounts to be deducted for depreciation. He also used the inspection method in depreciating the local distribution systems in each of the cities considered of sufficient size and impor-

tance to be supplied with artificial gas on the exhaustion of the natural gas reserves. For all classes of property whose reasonable expectancy extends beyond the 18-year period (except the distribution property which can be used in the artificial gas business) he determined the present value on the basis of its present age and future use, based on the life of the gas reserves being 18 years. Thus he amortized this class of property in the proportion to which the gas reserves have been exhausted, as testified to by R. E. Davis, plaintiff's geologist.

He submitted the following illustration of the application of his method. Assume that the age of a unit of property is 10 years and that its normal expectancy is not more than another 10 years, a total life of 20 years. In such case its life is not affected by the life of the gas reserves and the inspection method of Mr. Uebelacker is accepted. Suppose, however, that the age of a unit of property is 9 years and its normal expectancy is 18 years or more. The total life of the unit for the purpose of the plaintiff is 27 years, of which 9 years, or one-third, is spent. It is therefore in *66⅔* per cent condition, for no replacement of the unit is necessary and the investment therein will have been restored to the plaintiff on the exhaustion of the field through the operation of the depreciation or amortization charges.

> "To apply the inspection method in this instance, where the physical condition may reasonably be 90 per cent, would result in a charge against the public for the gradual retirement of the property over 18 years with such capital being returned to the owners for investment elsewhere, while the return on practically the full reproduction cost is is being included in the operating expenses of this utility for such entire period. This clearly results in a duplication of costs."

("Hagenah, Ex. No. 1", R. 1164.)

The results of Mr. Uebelacker's observation as to deterioration are fully shown in his Exhibit No. 1, especially in his "Summary of Valuation", (R. 536-538), where he segregates the properties into four divisions—Production, Transmission, Distribution and General—and records the estimated reproduction cost of each of the principal items of property in each division, both new and less deterioration.

Similarly, Mr. Hagenah in his "Summary of Appraisal" and accompanying tables (R. 1166-1177) gives the result of his reckonings, using the combined theories of observation and amortization, as heretofore outlined. His methods clearly appear from these tables. In the numerous instances where he approved the application of the observation principle, he accepts Uebelacker's figures. In others, after accepting Uebelacker's estimate of reproduction cost new, he determines the present per cent condition of each unit or class of property based upon the relation of entire period during which it will be used (called "life") assuming the future life of plaintiff's gas fields to be 18 years. (R. 1169-77.)

In discussing the allowance claimed by plaintiff for amortization of its property, plaintiff adopts the principle for which Mr. Hagenah contends, stating it impressively in the following language at page 52 of its brief:

> "There is a radical difference between a company engaged in producing, selling and distributing natural gas and one whose business is supplying artificial gas, electricity or water. The commodity supplied by the latter may for practical purposes be considered as inexhaustible. The former resembles a mining or an oil company in that the product which it purveys, when once consumed, cannot be renewed and is gone forever.
>
> "It necessarily follows that such portion of the

physical plant of a natural gas company as cannot be commercially used for other purposes when the supply of gas is exhausted then becomes worthless apart from such salvage value as the material composing it may have"

The result of this summarized appraisal was that for 41.5 per cent of the present reproduction cost of the depreciable physical property as estimated by Uebelacker, Mr. Hagenah adopted the same method and reached the same conclusion as did Uebelacker, but for 58.5 per cent he adopted the amortization method. They arrive, respectively, at the following depreciated values of the physical property:

	Uebelacker (R. 536)	*Hagenah* (R. 1166)	*Difference*
Production System (Exclusive of Leaseholds)	$ 7,830,400	$ 7,389,894	$ 440,506
Transmission System	11,154,326	9,713,397	1,440,929
Distribution System	2,694,806	2,633,268	61,538
General Property	594,742	576,305	18,437
	$22,274,274	$20,312,864	$1,961,410
Overheads	6,357,046	3,656,316	2,700,730
	$28,631,320	$23,969,180	$4,662,140

The difference in overhead valuations is, of course, attributable largely to the manner of estimating the allowances therefor, a matter already discussed. On the physical properties, Mr. Hagenh's finding is less than Mr. Uebelacker's by $1,961,410, most of which occurs in the transmission system, which, as noted above, must be abandoned and will be worthless, except for salvage, when the gas reserves are exhausted. There is no justification for charging the public with a return on practically the

value new of property which will be abandoned at a definite date, for reasons not connected with its own structural condition. The principle of actual and observed depreciation has, we submit, no application to such properties.

We direct the Court's attention to the Commission's criticism that Hagenah would have it "speculate as to what may become of this physical property when the gas fields with which it is connected are exhausted", and "assume that the cities of Charleston and Huntington will be supplied by artificial gas plants", and its conclusion "This theoretical procedure advocated by Mr. Hagenah must give way to the facts as found by Mr. Uebelacker" (R. 87). The Commission went afield here. The "speculation" and "assumption" referred to were not made by Hagenah to justify his amortization of certain portions of plaintiff's property, but as reasons for his application of Uebelacker's observed deterioration method to portions of plaintiff's distribution system. **Mr. Hagenah accepted the observed deterioration findings of Mr. Uebelacker as to those portions of plaintiff's property which he considered would be available for use in the artificial gas business.** Property of this class was properly considered to have an indeterminate life. Mr. Hagenah measured its value by its condition, as in the *Electric Gas & Electric* case. While applying the principle of that case, he made a distinction as to property which has a limited life only.

Furthermore, the time will come when the consumers will have returned to the company through annual amortization provisions, say, 95 per cent of the value of the property, leaving only 5 per cent left to repay, and yet

according to Uebelacker's theory of accrued depreciation, they will still pay rates based on a fair value which is 90 to 95 per cent of the value new. The unfairness of this situation is apparent. It was so recognized by the District Court:

> "The protestants' expert, Mr. Hagenah, calculates the depreciation at $11,421,972. The principal and indeed the only substantial difference between him and Mr. Uebelacker is that the latter took into account nothing other than the observed physical depreciation, while he held that, when the normal life of any item of the plant will probably or certainly be cut short by the depletion of the supply of gas, it should be treated as now proportionately less valuable, because, no matter in how good physical condition it is, it has already run out a part of its definitely limited span of life. There cannot be room for much difference of opinion that a pipe line, which will lose all its value at the end of say eighteen years, because there will no longer be any use for it where it is and because it will cost more to dig it up than it will be worth when brought to the surface, is not in any reasonable sense of the term worth as much as would be one out of which forty years of useful service can be expected. From the standpoint under consideration, it would make little or no difference whether the pipes had been newly laid or had been in the ground for years. In either case, they would be efficient for eighteen years, and after that they would both be equally valueless. **Logically, Mr. Hagenah would seem to have followed the right method of ascertaining the present fair value of the property.** On the other hand, Mr. Uebelacker would be correct if what the plaintiff is entitled to earn is to be figured with the primary purpose of preserving to it the money it has prudently invested in the public service. Nevertheless, the Commission rejected Mr. Hagenah's and

accepted Mr. Uebelacker's figures for depreciation."

(R. 1245-1246, 14 Fed. 2d. 215.)

(C) ESTIMATED HISTORICAL COST

On the theory that prior to 1915 the books of the plaintiff do not present a satisfactory record of the cost of plaintiff's properties, Mr. Uebelacker, in lieu of a report on book cost, prepared in great detail the "estimated historical cost of the physical property" as of December 31, 1923. In this estimate he valued all property now in existence and installed prior to December 31, 1915, at prices representing the average during the ten-year period 1906-1915. He determined the cost of all property installed since 1915 from the records of the company, which showed the net cost of additions and retirements during the period. "This method was found to give the most accurate and practical determination of historical cost." ("Uebelacker Ex. No. 3", R. 554.) The figure thus arrived at, including overheads, but exclusive of natural gas rights, working capital and going value, is $25,090,788.00. (R. 550.)

The Commission analyzed this report. It points out that the fact that during the period prior to 1915 the average market price rather than the actual price was used would naturally account for some variance between Mr. Uebelacker's historical cost and Mr. Jurgal's book cost. (R. 90.) However, the more substantial difference is owing to Mr. Uebelacker's use of the same direct overheads (R. 91) for the period of 1906 to 1915 as were used in connection with the reproduction cost estimate as of December 31, 1923, and the same general overheads except that interest was taken at 6 per cent. instead of 8 per cent. (R. 210, 559.) The general overheads alone amount to $4,449,333, although the plaintiff since the in-

ginning has charged practically nothing for such items. (R. 406.)

The allowance of these overheads is, we think, shown to be unsound by Mr. Jirgal for reasons pointed out by him. (R. 406.)

The Commission rightly concluded that the historical cost estimate of Mr. Uebelacker more nearly represented estimated reproduction cost. (R. 91.) However, it was one of the "relevant facts" considered by the Commission in fixing the present fair value at $25,000,000.

(D) BOOK COST OF PHYSICAL PROPERTY

As said by the District Court (R. 1246), had the estimate of reproduction cost been the only evidence of value in the record, no doubt the Commission would have fixed the present fair value of the physical properties at $28,370,988. (Judge Rose through arithmetical error computes Uebelacker's depreciation allowance at $8,433,105, instead of $8,423,105. He thus arrives at a total reproduction cost new less depreciation estimate $10,000 less than the figure fixed by the Commission.) Despite the fact that counsel for plaintiff insisted on treating "reproduction cost new less depreciation" as synonymous with "present fair value", there was other material evidence of value before the Commission, notably book or investment cost, as as calculated by Jirgal from the plaintiff's books and the "estimated historical cost" report of Mr. Uebelacker, above referred to.

In his "Exhibit No. 3" (R. 1081-1116), Jirgal submitted a detailed study of the investment cost of all of the properties, including both the physical properties and gas rights, acquired by the plaintiff company. A searching analysis of the financial side of the organization of the company appears at pages 1081 to 1090 of the record.

As hereinbefore shown, the company was organized in 1909, and within two years acquired certain gas rights of

the original United Fuel Gas Company, the Hope Natural Gas Company and the United States Natural Gas Company. It acquired a transmission and distribution system from the latter company. Prior to this consolidation, such gas rights and other properties had been given a value and carried upon the books of each constituent company. The price paid by the plaintiff, partly in cash and partly in debenture bonds, bore no relation whatever to this book value. In the case of the United States Natural Gas Company, the price paid was $2,081,250, while the net assets carried to the books of the plaintiff showed $4,073,898.74. A report of the assets of the plaintiff and their source immediately after the purchase showed (R. 1081-1084):

United Fuel Gas Company (Old company)	$ 1,114,013.25
United States Natural Gas Company	7,116,119.70
Hope Natural Gas Company	8,392,072.90
	$16,622,205.85

This total furnished the principal basis for the finding by the commission of the rate base of $16,000,000, representing "actual investment" as of December 31, 1915, in the early rate case, No. 482. (*Re United Fuel Gas Co.*, 1 P. S. C. W. Va. Dec. 238.) In 1911 the plaintiff made an appraisal of its physical properties (transmission lines, wells, etc.). It had previously assigned a value of $5.00 per acre to its gas rights. The appraisal of the plant, however, left approximately $2,000,000 unassignable to any property. It became necessary, therefore, to reappraise the leases, which was done, and as a result thereof the aggregate of these appraised values *exactly absorbed the $2,000,000 excess carried on the books.* Such is the

history of the "book cost" of the gas leases, as the term is used in this case. (R. 1084.)

The value of the physical property was fixed by the appraisal of 1911, which value together with the net additions to December 31, 1923, as worked out by Mr. Jirgal in Exhibit No. 3, resulted in the figure of $19,945,582 ("Cost of Property and Plant Adjusted", less acreage, "Jirgal Exhibit No. 1", R. 1071, 1072), the book cost of the physical properties. It can certainly be no ground for complaint by the plaintiff that Judge Rose was thus induced to say that for its tangible possessions the plaintiff "*had paid* up to December 31, 1923, $19,945,582.16". (R. 1240.)

(E) REPRODUCTION COST MEASURED BY INDEX FIGURES

Mr. Hagenah submitted one estimate of present value to the Court which was not presented to the Commission (R. 484.) It is the estimate of reproduction cost based on the index numbers of the Department of Labor, referred to by Judge Rose. His method was to reduce Mr. Jirgal's book cost figures to 1924 dollars. The result was an adjustment in the value of physical property from $19,945,579 to $24,545,809. That this figure falls short of the reproduction cost new estimate of the engineers is due to the fact that the book cost includes none of the general overhead charges estimated by the engineers. A further reason is probably that the record of the change in price of items of public utility cost during the war and post-war years shows an increase somewhat greater than the average of the cost of commodities generally. (Hagenah, R. 485.)

(F) INCOMPLETE CONSTRUCTION

The protestants contend that the item of incomplete construction submitted in the last days of the hearing before the Commission should not have been considered by that body. The issues of the cause were joined as of

December 31, 1923. That was the valuation date adopted by the plaintiff. The engineers for both the plaintiff and the protestants made their findings as of that date. Complete accounting analyses of the operating results of the company, as well as the analysis of its book cost, were also brought down to that date.

In order that the issues may be fairly joined, the evidence must be based upon some specified date, which this Court has frequently referred to in rate cases as the "valuation date"; otherwise, either side, during the last moments of the hearing of the case, could introduce evidence which the other side would have no opportunity to combat. This is exactly what happened in the present case.

There are further reasons why this evidence should not have been considered by the Commission. It is clearly shown that most of these additions were placed in operation in December of the year 1924, and, therefore, had not been devoted to the public use in excess of one month. It does not appear how much of the new construction represents actual new property and how much consists of replacements financed out of the depreciation reserve. The company made only partial showings of the earnings and expenses for that year, none of which could be examined by the protestants in the way in which the other exhibits of the company had been analyzed. And, more important than this, the Commission had no opportunity to examine it, and Chairman Stathers' opinion shows clearly that he was forced to make the most general kind of estimates for the year 1924. (R. 133.)

The Commission allowed $600,639.45 for 1924 construction which had been completed up to November 30th of that year. The protestants think that upon the present record the Commission should not have considered construction expenditures, or the estimated operating results

for the year 1924. The District Courts, in both the West Virginia and Kentucky cases, apparently took this view, as both Courts based their consideration of the case upon the figures for the calendar year 1923. Judge Rose was of opinion that the 1924 additions and operating results were matters to be brought before the Special Master. (R. 1274.)

G. SUMMARY

The following evidence of the value of the physical property was before the Commission and the District Court:

Submitted to the Commission:	
Reproduction cost new Less Depreciation—	
By Uebelacker	$28,631,320
By Hagenah	23,969,180
Historical Cost—By Uebelacker	25,090,788
Book Cost—By Jurgal	19,945,582
Submitted to the District Court in Addition to the above—	
Reproduction Cost Arrived at by the Application of Index Number to Book Cost	24,546,309

The Commission weighed all of this evidence and Chairman Stathers concluded that the fair value of the physical property devoted to public use as of December 31, 1923, was $25,000,000.00. Commissioner Divine fixed the value at $26,000,000.00; the District Court said it was *not in excess of* $26,000,000.00, and Judge Hickenlooper fixed it at $26,283,844.00. The following language of the Commission indicates the full consideration which it accorded all of these various methods of valuation:

"As indicated in the opening paragraph, there has been developed fully for the Commission estimates of the reproduction cost, new and less depreciation, an estimate of the historical cost and the book cost of the property. Having these estimates the Commission is not dependent wholly upon any one of them as sometimes proves to be true. The Commission has before it for the years covering the life of the Gas Company, as represented by the book cost, and for the present, as represented by both the reproduction and the historical cost estimates, the prices and cost of material and labor during what is generally regarded as the 'period of high prices.' Likewise, it has before it the costs and prices prevailing prior and subsequent to such period. Giving consideration to the whole record, the Commission has had the benefit of all relevant facts and is in a position to find a value from such facts agreeable to the principles enunciated upon the subject of 'present fair value' by our own Supreme Court of Appeals and by the United States Supreme Court and cases there cited." (R. 91)

Plaintiff persistently takes the position in this suit that having accepted Uebelacker's estimate of the cost of reproduction new, his overhead allowances and his theory of depreciation, the Commission should have accepted his estimate of the reproduction cost new less depreciation, $8,8-631,320 as the fair value of plaintiff's physical property without considering any other evidence. The term "fair value" is not synonymous with "cost of reproduction less depreciation." It has been repeatedly held that there need be no slavish adherence to the cost of reproduction principle, or to any other one evidence of value. *Bluefield Water Works & Improvement Co. v. Public Service Commission*, 262 U. S. 679; *Georgia Railway & Power Co.*

v. *Railroad Commission*, 264 U. S. 625; *Minnesota Rate Cases*, 230 U. S. 352; *Smyth* v. *Ames*, 169 U. S. 466; *Kings County Lighting Co.* v. *Prendergast*, 7 Fed. (2d) 192; *Brooklyn Union Gas Co.* v. *Prendergast*, 7 Fed. (2d) 628. There can be no question that the Commission gave controlling weight to the cost of reproduction new less depreciation in its conclusion. *McCardle* v. *Indianapolis Water Co.*, 272 U. S. 400. But the Commission had before it the book additions by years as presented by Jirgal's Exhibit 6 (R. 1143) and it was thus informed of the very substantial additions which have been made during recent years, that is, during the period of high prices. In at least three or four of the years since 1916 the price level was higher than in 1923 and in none of the years since that date was it materially lower than during 1923. The table shows the substantial portion of company's physical plant built in the so-called high price years.

Year	*Per Jirgal Exhibit 6 (R. 1143)*	*Deduct Adjusted Book Cost of Gas Rights Per Jirgal (R. 1145, 1154)*	*Physical Property Exclusive of Acreage*
1909 to 1915, Inclusive	$17,278,315.88	$6,346,344.11	$10,931,971.77
1916 to 1923, Inclusive	9,010,595.95	$3,014.44*	9,013,610.39
Total	$26,288,911.83	$6,343,329.67	$19,945,582.16

*Red.

Substantially half of the property has been built in the period of high prices.

The difference between the book cost and the reproduction cost new less depreciation, as estimated by Uebelacker, is, as Judge Rose observes (R. 1242), almost altogether due to the liberality with which Uebelacker estimates the outlay which in reproduction would be made for direct and for general overheads, the latter alone being figured at $7,063,311.00.

Protestants contend that the Commission erred in accepting Mr. Uebelacker's view of overhead items and accrued depreciation. They contend that the view of their witness, Hagenah, should have been accepted on these points. Judge Rose sustains protestants on both points. If this had been done, the highest value of the physical property becomes $23,969,180, which is $1,000,000 less than the fair value found by the Commission.

2.—Working Capital

The working capital allowance of $990,000 is said by Mr. Uebelacker to include the amount shown on the company's books for materials and supplies on hand at December 31, 1923, and a reasonable allowance for cash in bank, together with two months' average operating expenses based upon the year ending December 31, 1923. (R. 520.) Mr. Hagenah accepted this allowance as reasonable (R. 1163) and it accordingly was adopted by the Commission.

3.—Going Concern Value

Plaintiff's bill does not challenge the Commission's allowance of $3,000,000.00 for going concern value. No assignment of error mentions it. A reasonable presumption, therefore, would be that plaintiff acquiesced in this finding of the Commission.

Mr. Uebelacker made no calculation of the going value,

as "such value cannot be arithmetically computed". (Uebelacker Ex. No. 1, R. 507.) Nevertheless, he did not mean to imply that such value was non-existent, nor that an allowance should not be included therefor. Since in his opinion the plant was in a state of 100 per cent working efficiency, and was a going concern with customers attached, as contrasted with a dead plant, he considered the cost of reproduction new without any deduction for deterioration to be the correct measure of the value of the plant. (R. 224.) Thus he completely absorbs the $8,423,105.00, his estimate of accrued deterioration, (R. 536) in a blanket allowance for going concern value. If it were really true that the difficulty of estimating and computing depreciation could be thus easily eliminated, there would be much to commend Mr. Uebelacker's theory of going value. However, an old plant does not have and cannot be adjudged to have value equal to that of the same plant and equipment new. Whatever of value the "going" business and the attached patronage may add to the concern, no sound reason can be advanced for identifying it with the accrued depreciation. The latter is neither measure nor guide of the former.

Mr. Hagenah recognized "going concern" as an element of value, and as a result of his analysis of many similar cases and a study of plaintiff's business and properties fixed $3,000,000.00 as a fair allowance therefor. (R. 429.) As stated above, this figure was approved by the Commission and the District Court. Judge Hickenlooper deemed this allowance extremely generous under the facts of this case, referring especially to the liberal overhead allowances.

> "The expert called for the protesting municipalities (Hagenah) has conceded the propriety of including an item of $3,000,000 as 'going concern' value in arriving at the present fair value of the complainant's properties. Although not contested,

we are not able to join wholeheartedly in this concession. There are cases in which the plant as an entirety has a value greater than the value of the component parts, but such value is difficult of computation, most uncertain in amount, and generally is the outgrowth of the expenses incident to assembling in one unit all the various parts which go to make up the whole. These expenses have received consideration in estimating overhead expenses during and prior to construction. So also the items of property have been valued as integral parts of the new operating whole, and as already charged with the attendant values as such, as well as with construction overheads. In addition to this general overhead charges of every conceivable kind have been included. Thus, as *direct or construction overheads* added to the labor portion of unit costs in valuation we find insurance, loss and use of tools, field supervision, timekeeping, and contingencies, and as part of the overhead, added to cost of material, purchasing, warehousing, and contingencies. In addition to these we find other *general overheads* added for engineering and superintendence, administration, interest, preconstruction costs, legal expenses, insurance and taxes, and cost of financing.

"It is extremely difficult to conceive of any other elements which might go into the property to increase its value as an entirety over the aggregate of component parts, and we must not, in the name of going concern value, sanction the inclusion of mere good will as predicated upon earning capacity. This position is well expressed by the Supreme Court of Iowa in *Cedar Rapids Gas Co. v. Cedar Rapids*, 144 Iowa 426, 120 N. W. 966, 48 L. R. A. (N. S.) 1025, 138 Am. St. Rep. 299, 223 U. S. 655, 32 Sup. Ct. 389, 56 L. Ed. 594, • • • As

previously intimated, the value of the plant is to be estimated in its entirety, rather than by the addition of estimates on its component parts, though the latter course will materially aid in determining the value * * * Save as above indicated, the element of value designated as "going concern" is but another name for "good will" which is not to be taken into account in a case like this * * * This language was cited with approval in *Des Moines Gas Co. v. Des Moines*, 238 U. S. 153, 35 Sup. Ct. 811, 59 L. Ed. 1244, in which the Supreme Court approved the disallowance of a 'going concern' value.

"The evidence does not satisfactorily distinguish between that going concern value claimed and good will, and in so far as we admit such item in the valuation we are of the opinion that it must be held to include all the disputed overhead charges. **Certainly we could not include a going concern value in excess of the $3,000,000.00 conceded.** Mr. Uebelacker originally included no allowance whatever for this item (See R. 536) and his estimate of a going concern value of $8,423,111.00 is wholly without reason or evidential support."

United Fuel Gas Co. v. Railroad Commission, 13 Fed. (2d) 521.

4.—The Gas Reserves

We agree with counsel for plaintiff that the principal item of controversy in connection with valuation in this case is the valuation of the gas rights of the plaintiff company. In its bill plaintiff alleges the present value of its gas rights to be "at least the sum of $30,000,000" (R. 116). Its witness Uebelacker testified that in his opinion plaintiff's gas rights had a value of $30,449,176.00. Other

witnesses for the plaintiff submitted estimates varying from $30,000,000 to $45,000,000. Protestants deny that any such value is established by the evidence. As hereinbefore shown, Mr. Jirgal testified to the "book cost" of the gas rights as shown by plaintiff's records. This book cost does not, as its name would imply, represent the actual cost to the plaintiff, but original cost enormously inflated by the various "appraisals" of plaintiff and its vendors. Commissioner Stathers adopted the figure submitted by Jirgal, $6,361,511.42 ($6,343,329.67 plus additions in the year 1924 of $18,181.75) as the best evidence of the value of the gas rights (R. 117). Commissioner Divine found the present value of the gas rights presently used and useful to be $10,500,000.00 (R. 135). He says that he arrived at this amount by a consideration of the value of the gas leases "as such", and the fact that the consumers have paid and in the future will pay more to maintain the leases than the company has invested in them (R. 137). Judge Hickenlooper, taking substantially the same view as Commissioner Stathers, rejected the evidence of appreciated value offered by the plaintiff as incompetent and approved the book cost figure as the best estimate of present value. *United Fuel Gas Company* v. *Railroad Commission*, 13 Fed. (2d) 510, 520. Judge Rose found it unnecessary to make a "definite finding" upon the question of the gas valuation, although it is evident that he held very decided opinions on the subject. The views of these several courts will be considered later.

Any analysis of the legal principles applicable to the question under discussion means little without a clear understanding of what is meant by the term "gas rights" or "gas reserves".

Many thousands of acres of West Virginia soil are underlaid with natural gas. At a depth of from two to three thousand feet under the surface this gas is confined under enormous pressure in the so-called "pay-sands".

As in other states the gas and oil fields are usually near each other. Often a well produces both oil and gas in paying quantities. Gas from oil wells, or "casing-head" gas is particularly rich in gasoline. When discovered by drilling and transported in pipes or "mains" to the centers of industry and population, the gas, frequently stripped of gasoline, becomes a most desirable and convenient fuel both for manufacturing and domestic purposes. Prior to 1900 gas wells were usually found by prospectors in their search for oil, and when discovered it was used in a haphazard way throughout the state for lighting and fuel. A great deal more was wasted in torches left burning in the fields, and in extravagant and poorly designed appliances. The new century, however, brought home the great value of the gas as an article of commerce and since 1900 no natural resource with the exception of coal and oil has made a more important contribution to the economic growth of the state. The use of natural gas in the homes of such cities as Charleston and Huntington, both from the standpoint of utility and economy, has been for years and is now one of the advantages in attracting residents to those cities. Large industries are induced to locate in the state because of the peculiar advantages of natural gas as a fuel. Many of these concerns are intervenors in this suit, protesting against an unreasonable increase in their rates. Some of them were induced to locate in West Virginia largely by contracts with gas companies for fuel gas for a term of years at very low rates, some as low as five cents per thousand cubic feet, which contracts were held later by the state courts and the Commission to be invalid. *United Fuel Gas Company* v. *Public Service Commission*, 73 W. Va. 571; *Randall Gas Company* v. *Star Glass Company*, 78 W. Va. 252. Gas is measured for sale by meters, the unit of measure being the cubic foot, and the unit price being based on each thousand (M) cubic feet delivered. An idea of the vastness of gas production as a business may be gathered from the fact that in the year 1922

the plaintiff sold in excess of forty-six billion cubic feet (46,867,511,000 cubic feet) to its customers within and without the state. Of this total 14,872,918 M cubic feet were sold to retail consumers, and the remainder, 31,994,593 M cubic feet, to so-called wholesale purchasers. These wholesale customers whose names, together with the respective quantities purchased by each, appear at page 1134 of the Record, are public utility companies who purchase gas for transportation and resale outside of the area supplied directly by the plaintiff.

A considerable amount of gas is purchased by the plaintiff. Such purchases are treated as an operating charge. For the year 1923 the gas purchased amounted to 9,669,753 M cubic feet at a cost of $619,263.69, or at an average price of 6.4 cents per M cubic feet. (Jirgal Ex. No. 5, R. 1137). Such purchases are not the result of plaintiff's inability to supply all demands but are made because it is able to buy gas cheaply and thus conserve its own gas supply. (Davis, R. 968.)

(A) GAS RIGHTS OWNED IN FEE

On December 31, 1923, plaintiff (together with its subsidiary, the Warfield Natural Gas Company) was seized of the fee title to 41,969.47 acres of minerals, i. e., oil and gas. (Part I, Davis Exhibit No. 1, R. 713). A small amount of this, 43.2 acres, was oil only. Plaintiff is not in the oil business and when oil is discovered it is turned over immediately to the Ohio Fuel Oil Company, an affiliated corporation. The report of Mr. Davis shows that the plaintiff owns the surface rights in but 131.68 acres of its mineral lands.

(B) LEASEHOLDS

On the same date the plaintiff had so-called leases of the gas under 772,941 acres of lands in West Virginia and Kentucky, illustrative copies of which were filed in the District Court as "Jay Exhibit 3 J. C. No. 2" (R. 1031).

These copies were not before the Commission. There Mr. Davis referred to the leases as "the usual lease contract" and the Commision was limited to its general knowledge of gas leases and their usual terms and conditions. Opinion of Commissioner Stathers, R. 108). "Jay Exhibit 3 J. C. No. 1" (R. 1014), filed upon the hearing in the District Court, undertakes to summarize the more important provisions of the plaintiff's gas leases, although many leases frequently contain clauses not found in others, depending upon the demands of the lessor and the extent to which the company is willing to go in order to obtain the lease. Most gas leases are for a term of years and so long thereafter as gas is produced in paying quantities. Usually there is a cash consideration or "bonus", for the making of the lease, the amount of which ordinarily depends upon the acreage. The leases commonly provide for an annual or delay rental which, if a well is not drilled within the period stipulated, must be paid at stated intervals to keep the lease alive. If the tract is not drilled within the term of the lease, the lease must be renewed or a new lease taken. Such a renewal frequently requires an additional "bonus" or "renewal" charge. If gas is produced in paying quantities during the term of the lease the "delay" rentals usually terminate and thereafter a "royalty" is paid. In the case of gas the royalty is ordinarily a flat sum varying from $100 to $500 per well, although occasionally, as in the case of oil, the royalty is an agreed percentage of the production. In many cases the lease is for both oil and gas and sometimes where oil is the chief consideration to the lessor there is no provision for gas royalty. Lessors occupying positions of vantage occasionally require express forfeiture provisions, which operate in case of failure to drill within a specified time. Examples of all of the types here discussed appear among the many leases of the plaintiff. "Jay Exhibit No. 3 J. C. 1" (R. 1014-1030) shows "delay rentals" from twenty-five cents to twenty dollars per acre. A rental

higher than two dollars, however, is rare, and the average is around one dollar. In his report of the book cost Jirgal made a study of the original or bonus cost of the acquisition or renewal of the company's leases and found that the average cost thereof per acre during the period 1910 to 1923, inclusive, was forty-three cents. The highest average cost (eighty-three cents per acre) was during the period 1921 to 1923, which included an extraordinary payment of $25,000.00 for seventy acres in Kanawha County. Excluding this unusual transaction the average cost during the three years remained forty-three cents. (R. 1087.) It was further pointed out by Jirgal that the bonus payments bear a definite relation to the delay rental charge. In unproven territory where the annual rental charge is one dollar per acre, the bonus or down payment amounts to one quarterly rental or twenty-five cents per acre. In proven areas where the delay rentals range from $150 to $500 per well one annual rental is paid as a bonus. During the entire life of the company the renewal charges, amounting to $340,541, have been included on its books as a part of its capital account, and have been included by Jirgal in his estimate of book cost. (R. 1088, 1099.)

Three observations of Mr. Jirgal in connection with this study deserve notice (R. 1089-1090):

(1) "The bonus or leasehold payments on acreage renewed shortly after the original purchase (of leaseholds by the plaintiff in 1909) were considerably less than the original valuation assigned."

(2) "The company has included in its property account, both the original value placed upon the acreage and the bonus paid upon any renewals to date. Practically all of the acreage has been renewed at least once and in numerous instances twice since the original purchase."

(3) "The cost of reproducing the acreage today on a bonus payment basis is evidently less than the book value."

The rentals, royalties and the expense incident to the procuring of the leases have been carried on its books as an operating charge by the plaintiff and uniformly allowed by both the Public Service Commission and the Courts in West Virginia as such operating charge against the consumers. From June 1909 to December 31, 1923, the rentals and leasehold expenses amounted to $7,126,454.33 (Jirgal Ex. No. 3, R. 1091), exclusive of royalties. The royalties during the same period amounted to $1,691,455.63 (Opinion of Commissioner Stathers, R. 117; Jirgal Ex. No. 3, R. 1151, line 12). The attention of the Court is especially directed to the fact that the plaintiff has always carried on its books as operating charges all payments made by it in connection with said leases, except original and renewal "bonus" payments, (which have been capitalized) and that such payments (except said bonus payments) have been allowed as proper operating expense by both the Commission and the Court in this proceeding.

(C)—PLAINTIFF'S VALUATION OF GAS RESERVES AS REPORTED BY ITS ENGINEER, R. E. DAVIS

The principal foundation for plaintiff's estimate of the value of its gas reserves is the report of its engineer and geologist, Mr. R. E. Davis, of Pittsburgh, Pennsylvania. He made a survey of all of the gas lands controlled by the plaintiff and embodied his findings in a two hundred and fifty page report and several geologic maps, all of which appear in the record as Davis Exhibit No. 1. For the purpose of his investigation the plaintiff and its two subsidiaries, the Warfield Natural Gas Company and the Cabin Creek Gas Company were treated as one. In the whole study the location of each area with reference to producing territory was considered the best evidence of value. His study is founded on two premises:

(1) That gas leased is as fully the property of the

plaintiff as gas owned in fee, wherefore, he made no distinction between the fee lands and the leaseholds, (R. 269), and

(2) That the value of the gas rights is the value of the recoverable gas in the ground.

The result of his study was a classification of all plaintiff's holdings into six classes:

(a) Proven gas territory.
(b) Probable gas territory.
(c) Proven oil territory.
(d) Probable oil territory.
(e) Possible gas or oil territory.
(f) Unfavorable territory.

(a) PROVEN GAS TERRITORY. Mr. Davis defined proven gas territory as those areas "which have been thoroughly tested and which are now producing gas". (R. 711.) The production and rock pressure records of most of the wells of the plaintiff, and some of other companies, being available, it was Mr. Davis' opinion that the Boyle's Law, or rock pressure method, could be used with a "high degree of confidence" for the purpose of estimating the quantity of gas contained in said land and leaseholds. (R. 730). Table No. 4 of Davis Exhibit No. 1, (R. 847, 952) consists entirely of the production and rock pressure records of the many wells in the plaintiff's gas producing territory. This method is based upon the discovery two hundred years ago by Robert Boyle that the volume of gas varies inversely with the pressure, a proposition generally accepted by scientists since that time. Given the total production of any well, together with the decline of rock pressure (the pressure existing in a gas sand being measured in pounds above atmospheric pressure) during the production period, it is theoretically possible, according to Mr. Davis, to calculate the quantity of gas

remaining in the well. (R. 241.) His actual method was to divide the whole territory into small areas or groups of wells, according to the similarity of their natural characteristics and age, determine the average rock pressure for all of the wells in each group, and from a study of past production records, arrive at the volume of gas remaining in such area or group of wells. The gas content of a proven territory is therefore based on the proposition that "the same production will be obtained in the future for each loss of one pound rock pressure that has been obtained for a number of years in the past". (Davis, R. 237.) Graphs showing the relation of the decrease in production to the decline in rock pressure for each area are included in Table III of Davis' report. (R. 761-810.) Mr. Davis included as "proven territory" 136,384 acres. He concluded that his investigations indicated total estimated gas content in the proven territory as of December 31, 1923, amounting to 249.1 billion cubic feet. (R. 237.)

(b) Probable Gas Territory. In the case of probable gas territory there were no production or pressure records to aid the investigator.

Mr. Davis prefaced this section of his report as follows (R. 735):

> "The estimation of gas reserves of territory which has been classed as probable is natually a difficult and uncertain undertaking. Here we are dealing with territory which is believed, from a careful study of all pertinent facts, to be gas territory, yet had it been sufficiently drilled to prove the correctness of this conclusion, it would be proven territory. **Estimates made therefore of the probable territory must be considered as much less trustworthy than those made of the proven territory.**"

In the absence of records, recourse was had to the

method of comparing each given area with the nearest proven pool in the same sand, subject to such modification as might be indicated by outlying test wells. (R. 735.) Mr. Davis' direct testimony (R. 238) is remarkably brief and vague as to the method employed in determining this comparison. Because of this brevity and of the fact that "probable acreage" constitutes an alleged element of value more important, according to plaintiff's figures, than all other factors, we prefer to quote the record of Davis' testimony on the subject (R. 238):

> "In estimating the reserves of this probable territory he first found what the production of gas—that is, what the total reserve gas—has been per acre in the nearby adjoining proven and developed acreage. In estimating the reserve area classed as probable he found what the reserve is on the nearby proven acreage. For example, referring to Sheet No. 2, on which there is shown the greater portion of the Clendennin pool, the reserve of that pool, or the total production of that pool, has been determined as approximately 7.1 million cubic feet per square mile for each pound of rock pressure, that this determination was made by him. Referring again to sheet No. 3, let us say there is one square mile of territory classed as probable, and that that territory should be ranked as having a reserve which will produce 7.1 million feet per pound per square mile. The witness then determined what the gas reserve would be on that basis, and then modified that estimate, never increasing it, but generally decreasing it, to take into account the possibility that some acreage may not prove productive, or that some gas will be drawn by competitors. The average discount applied to the entire probable acreage for this purpose has been 38 per cent. That the witness found what the reserves in this probable territory

would be were it as good as the nearby proven territory, and then discounted that on the average 38 per cent to take account of the two things above referred to. That applying this method to the acreage indicated as probable, the witness finds that there is a total of 414.6 billion cubic feet of gas therein, making a total of 663.7 billion cubic feet in all of the acreage classed by him as proven and probable on the maps."

There is no explanation of the 38 per cent discount figure.

He made no allowance for merely "possible" or "unfavorable" gas territory, but with his estimate of the volume of the gas content of the proven and probable acreage as a basis, he filed his "Exhibit Z" (R. 950-982), in which he undertook to establish the present value of the gas reserves. This study is grounded upon a fundamental assumption "that the property of the United Fuel Gas Company might be placed in use in whatever way is most advantageous to the owner of the property" (R. 244.) According to the witness, the most advantageous market available to the plaintiff company is the Pittsburgh Industrial District, where, in competition with other fuels, he reckoned that the gas should be worth at least thirty-five cents per M cubic feet. Upon this basis, Mr. Davis prepared a series of tables, particularly "table No. 5" (R. 978) in which he estimated that the plaintiff was in position to deliver to the Pittsburgh market 631.6 billion cubic feet of gas over a period of eighteen years. Deducting the estimated transportation cost and line loss from Cedarville on the state line to Pittsburgh, the value of the gas at Cedarville throughout the eighteen years was fixed at 27.99 cents per M cubic feet, the net value after deducting all operating costs at a figure varying from 16.845 cents for the year 1924 to 14.247 cents for the year 1941 and the present worth of the property useful for the serving of the

new but theoretically available market, after applying a compound discount factor based on eight per cent value of money and deducting federal taxes, at $52,181,538.17. Deducting the present reproduction cost of those portions of the physical property necessary for conducting this hypothetical business, less depreciation, as calculated by plaintiff's witness Uebelacker, the present value of the natural gas fee and leasehold property was found to be $32,458,129.17. (R. 973.)

It is pertinent here to note the criticism of Judge Rose (R. 1257) that in his "Table No. 5" Mr. Davis for some reason involves in his calculations 38.6 billion cubic feet of gas which he estimates plaintiff will purchase during the next eight years. As the Court says, this gas has no place in a valuation of plaintiff's property, and the profit therefrom, $4,967,291.46 (Judge Rose) should be deducted.

We have outlined Mr. Davis' method of valuation because it constitutes a considerable part of the record, and particularly to show the many assumptions and hypothetical situations which compose the basis for his findings, circumstances which have appeared of importance to other courts in their consideration of the plaintiff's gas rights. However, the plaintiff goes only part of the way with its geologist. While accepting his estimate of the volume of the gas content, the bill makes no reference to the valuation of Mr. Davis, but refers to the valuation arrived at by Mr. Uebelacker, $30,449,176. (R. 10.) It is not disclosed whether this choice was owing to a preference for the reasoning or for the result of Mr. Uebelacker's estimate.

(D)—MR. UEBELACKER'S VALUATION OF THE GAS RIGHTS

Mr. Uebelacker, in introducing his report on the value of the gas rights, said:

> "Leaseholds and natural gas rights, proven and probable, have been included in the valuation at an

amount computed as *the value of the estimated remaining gas content* of the proven and probable acreage.

"The principle involved may be stated as follows. The measure of the value to the owner or lessee of gas in the ground is the difference between the prevailing market price at which such owner or lessee can purchase gas delivered to the field mains and the cost to such owner or lessee of producing and maintaining with his own wells an equivalent supply of gas at the same point of delivery."

(Uebelacker Ex. No. 1, R. 520-521.)

In arriving at the value of plaintiff's gas in the ground it was necessary for Mr. Uebelacker to make three estimates.

(1) The amount of recoverable gas controlled by plaintiff. He did this by adopting Mr. Davis' estimate of 663,108,431 M cubic feet.

(2) The prevailing market price. Mr. Uebelacker measured the market price by the prices paid to various producers by several purchasers of gas in fields near those of the plaintiff, and by opinions expressed as to what natural gas would sell for if delivered for industrial purposes at Pittsburgh, Pennsylvania. The following prices were taken as illustrative: 8c per M cubic feet paid by the South Penn Oil Company for gas delivered in the field; 16c per M cubic feet paid by the Owens Bottle Company, a Charleston manufacturer; 17c per M cubic feet paid by the International Nickel Company, of Huntington. Plaintiff's price of 22c per M cubic feet to the Hope Natural Gas Company (R. 522, *et seq.*), and the price for gas in the Pittsburgh industrial market were given especial consideration.

As pointed out by Judge Rose, (R. 1260), **Mr. Uebelacker found the Pittsburgh price to be 30c per M cubic feet, as contrasted with Mr. Davis' figure of 35 cents** (R. 527), **producing a difference of over $30,000,000 when applied to Mr. Davis' estimate of gas content.**

(3) The total unit cost to the plaintiff of production and maintenance, including operating expenses, depreciation, amortization of equipment and a fair return.

He arrived at the value by deducting the production cost, so determined, from the prevailing market price as estimated in the foregoing paragraph. It is unnecessary to review here the details of Uebelacker's calculations, all of which are graphically shown in his Exhibit No. 1. Briefly, his method was to estimate what it would have cost the plaintiff to supply gas to each of the buyers mentioned above at the same points of delivery. Such estimated cost included not only all costs of production and transportation, but additional allowances for depreciation, depletion, amortization and a fair return. Presumably, Mr. Uebelacker deducted the average of the production costs so ascertained from the average of the current and estimated market prices found by him. At any rate, he says that "based upon a review of these results, he assumes a fair and reasonable value of the gas in the ground of not less than $0.05 per thousand cubic feet. (R. 535.) The consequent total of the proven and probable acreage (Davis' estimate) was estimated by Uebelacker to be $33,155,421.55. He made no attempt to reduce this amount to present value, despite the evident impossibility of marketing the entire 663 billion cubic feet of gas except over a long period of years. Employing Mr. Davis' estimate of 61.64 cents as the present worth of a dollar to be returned over 18 years, Judge Rose adjusted Mr. Uebelacker's estimate to $20,455,254.00. (R. 1260.)

Mr. Uebelacker also adds an estimate of the value for the "possible" or "wild-cat" territory, 552,319 acres. This

he includes at $5.96 per acre, the "cost of acquisition in 1923", thus adding the additional sum of $3,293,754.00. (R. 535.) This is a most startling calculation, and since Mr. Uebelacker furnishes no detail of his 1923 acquisition cost of $5.96, it is inexplainable. In view of the analysis of the acquisition cost of unoperated acreage by districts for each year since 1909 furnished by Mr. Jirgal (R. 1102-1106) the figure of $5.96 must be definitely challenged. At pages 1100-1101 of the record Mr. Jirgal shows that the average acquisition cost per acre for all unoperated acreage during the period 1921-1923, including the extraordinary payment of $25,000 for 70 acres hereinbefore referred to, was *just 83 cents*. At page 1106 Mr. Jirgal further shows that in the year 1923 the company secured 15,184.02 acres at a cost of $10,320.99, or about 66 cents per acre.

(E)—VALUATION ESTIMATES OF "PRACTICAL GAS MEN"

Plaintiff introduced five witnesses who gave their opinions as to the value of plaintiff's gas rights, not as a result of a technical investigation, but from the standpoint of practical oil and gas men. Each of these gentlemen was interested in gas development companies operating properties similar to those of the plaintiff. Mr. Sullivan, Mr. Corrin, Mr. Gregory, Mr. Womack and Mr. Davidson were each connected with companies operating fields very near to plaintiff's leaseholds and either buying gas from or selling gas to the plaintiff. Their valuation estimates ranging from $30,000,000.00 to $45,000,000.00 were all arrived at on the basis of present exchange or market value of the gas in regulated markets. There was no evidence of any nearby market capable of absorbing plaintiff's gas in the quantities now being produced. *No gas purchasing company is suggested other than public utilities subject to public service regulation.*

(F)—FALLACIES OF PLAINTIFF'S VALUATION OF GAS RIGHTS

As all of the estimates of the value of the gas rights submitted by Mr. Davis and Mr. Uebelacker are founded wholly upon the former's estimate of the gas content of the so-called "proven" and "probable" acreage, 6637 billion cubic feet, if this figure is shown to be untrustworthy, plaintiff's purported valuation of gas value accordingly falls.

(1)—MR. DAVIS ON "PROVEN TERRITORY":

Plaintiff takes the position that Mr. Davis' testimony on the gas content is uncontradicted. On the contrary, protestants' witness Hagenah filed three exhibits (Nos. 1, 2 and 3, R. 1163-1209) in which he pointed out the fallacies in practically every step of Davis' methods. However, throughout this proceeding, and all former hearings before the Commission, protestants have always insisted that the conclusions of Mr. Davis on this head were the result of speculation rather than calculation. The Commission and the State Supreme Court have consistently taken the same view. "His estimates are mere estimates and nothing more." (Opinion of Commission, quoting W. Va. Supreme Court of Appeals, R. 101.)

Upon the premise that the principle of Boyle's Law is fully applicable to natural gas accumulations confined in rock and sand formations three thousand feet under ground, Mr. Davis classifies 136,384 acres as "proven" territory, and estimates its gas content at 2491 billion cubic feet. (R. 737). He says this territory has been "thoroughly tested", and is now producing gas. (R. 711.)

Yet, of this area but 68,900 acres are classed as operated

and producing territory (R. 714). To quote Mr. Davis, "it would appear that about one-half of the proven territory has been drilled." (R. 219.)

(2)—PROBABLE TERRITORY:

In the case of the so-called "probable" territory, Mr. Davis' estimates have even less foundation in fact. As stated previously, he admits that such estimations are naturally "a difficult and uncertain undertaking" and must be considered as much less trustworthy than the estimates of the "proven" acreage. His method was essentially a guess as to the probable quantity of gas contained in numerous leaseholds aggregating 124,672 acres. A characteristic phase of his estimate of this territory is his treatment of the dry holes with which his "probable" territory is liberally sprinkled. He states that where a gas field **"can be followed for a given distance, say 15 miles, it is reasonable to believe that it will extend an additional two miles".** (R. 264.) It should be added that Mr. Davis maintained this belief despite the presence of a line of dry holes, his explanation being that "dry holes do not necessarily mean that all of the adjoining territory is dry", and "that as to some of the dry holes, they are in all likelihood a local condition." (R. 264.) It is upon such "likelihoods" that Mr. Davis estimated the content of the "probable" acreage to be more than 414 million thousand cubic feet, and upon which plaintiff asks that its patrons pay a fair return, in addition to the cost of acquiring and maintaining the acreage by the payment of the bonus and delay rental costs. In other words, the consumers are to be forced to speculate

upon the probabilities of an untried gas field, in addition to paying all of the carrying charges and incidental expenses necessary to keep the leases alive.

As evidence of the accuracy of his judgment, Mr. Davis testified that subsequent to his survey one hundred and ninety-seven wells had been drilled by various companies in the territory classified by him as "probable". Of these wells, one hundred and seventy-four were "producers" and twenty-three were dry holes. However, he is entirely silent as to the volume of the producing wells and as to whether their production bore out his estimates of the recoverable gas. (R. 273.)

Before undertaking to discuss in detail the evidence of Messrs. Davis, Uebelacker and other witnesses of the plaintiff who testified in the present proceedings as to content and value of plaintiff's so-called gas reserves, it will be of interest to trace the history of these gas rights, including the cost thereof to the plaintiff, and the development of the varying views and theories of the plaintiff in its efforts to require the consumers to pay not only the expense of acquiring and carrying its gas leases, but also of amortizing the present fair value thereof claimed by the plaintiff to amount to not less than $80,000,000. This history is available in the prior decisions of the Commission and Supreme Court of Appeals of West Virginia, upon previous applications of the plaintiff for increases in rates, many of which have been allowed.

In its first application before the Commission in 1916, (Case No. 482, 1 W. Va. P. S. C. Dec. 238), the company introduced as evidence of value of all its property used in the public service, its investment therein, as shown by its books. No attempt was made to value the gas rights separately, and the Commission adopted as the rate base the sum of $16,000,000, which was substantially the book cost of all of plaintiff's properties.

In the second case, (No. 585, 1 P. S. C. W. Va. Dec. 501, P. U. R. 1918 C 193) in the year 1917, the company separated its gas holdings into two classes:

Operated acreage	52,349 acres
Unoperated acreage	770,034 acres
Total	822,383 acres

In the year 1917 the company produced 39,290,000 M cubic feet of gas from 560 wells, a production not far below its production at this time.

Its witnesses made no attempt to speculate as to what portion of the unoperated lands were "probable" or "possible", but valued all of its leaseholds, both operated and unoperated, at the initial or bonus cost, $6.92 per acre. On this basis, the value of the unoperated leases aggregated $5,329,512.26. The Commision noted that "The rentals, taxes and other carrying charges upon this acreage is carried as a gas operating expense and paid from gas earnings". The company sought to include such value of all its leaseholds in the rate base. The protestants claimed that "the large investment in unoperated acreage imposed an unjust and unnecessary burden on the consumers, when required to pay rates sufficient to insure a fair return thereon, plus rentals and taxes". Upon this point of over-investment the following language from the opinion of Commissioner Wiles in that case is important:

> "We do not approve of the 'now or never' policy urged by counsel for applicant as ground for holding a vast acreage in reserve, upon the principle that it may otherwise be acquired by others engaged in the business of producing natural gas. We do not deem it necessary for the security of applicant's business that it control all probable gas territory in reasonable proximity to its production field or transmission lines. The applicant has an established business, consisting of many miles of trans-

mission lines and a number of large distributing plants. It is shown that applicant has been purchasing from other producers a little more than one-fourth of the gas produced and sold by it, at a price that seems somewhat less than the cost of production to the applicant company. It therefore seems superfluous to say the mere fact the applicant does not own all the producing gas acreage in proximity to its fields and lines necessarily means it will thereby be deprived of the gas production therefrom. As a matter of fact, judging from applicant's past experience, and our general knowledge of its location and strategic situation it seems more than probable that it should be able to procure gas produced from adjacent territory by independent operators at a reasonable price.

Under these circumstances we are of opinion that applicant has an over investment in unoperated acreage far beyond the reasonable reserve required for the future needs of its consumers. If a reasonable percentage of this acreage should prove productive, then the enhancement in value will compensate for the hazard of carrying a temporarily unremunerative investment. If it is barren, a reasonable amount of prospect drilling would establish that fact and the worthless area should be surrendered.

We are of opinion that the applicant should only carry at the expense of its consumers such undeveloped land as will insure uninterrupted service and an adequate supply of gas under a reasonable forecast of future conditions. If we, therefore, assume that, on account of exhaustion of its gas fields and increased consumption, the applicant will require one hundred and fifty additional producing wells each year to meet the depletion of wells and increasing demand, and that a reason-

able percentage of its undeveloped territory will prove productive, then it would seem that 50% of its present investment in unoperated acreage constitutes an ample reserve for the present rate period, and upon which it is entitled to earn a fair return. The reasonableness of this limitation is further apparent when it is remembered that the applicant is earning enormous profits from its oil and gasoline business, which are dependent for future expansion and development upon the probable productiveness of the undeveloped acreage held as gas reserve without making any substantial contribution to the expense of carrying charges or return upon the investment. We find the fair value of applicant's investment in unoperated acreage chargeable to its gas business to be $2,664,756.13."

Re Application United Fuel Gas Company, 1 P S C W Va Dec 501, 514

In the next case (*Re United Fuel Gas Company*, Case No 845, 1 P S C W Va Dec 651, P U R 1920 C 583) the gas company for the first time sought to capitalize the increased value of its gas leaseholds, or such part thereof as was actually producing gas. The opinion of the Commission, by Wiles, Chairman, is devoted mainly to a discussion of the facts as to the acquiring of these leaseholds and the theory and testimony of the plaintiff as to the valuation thereof, supplemented by a critical examination of the authorities for the legal principles applicable.

The gas company's exhibits and evidence showed that, as of January 1, 1919, its so-called gas reserves consisted of 753,666 acres, which it still divided into only two classes, namely: 56,874 acres of operated territory and 696,792 acres of unoperated territory. On December 31, 1918, plaintiff's gas acreage was carried on its books at an

investment cost of $6,597,224.91. It then set up upon its books, as representing the increased or appreciated value of its acreage, the sum of $31,778,111.42, making the total value of applicant's gas acreage as carried on its books $38,375,336.33.

The Commission again called attention to the fact that it had been the practice and custom of the gas company, when additional acreage was acquired from time to time, to charge to *capital* the expense of obtaining same, whether bonus, rental or purchase price, and thereafter to charge to operating expenses the delay rentals or royalties paid for carrying such acreage, stating that the "aggregate of the expense of acquiring this acreage is the sum at which it was carried upon the books of the company as investment on and prior to December 31, 1918", namely, $6,597,224.91.

Attention is called to the fact that applicant's unoperated acreage showed a decrease of over 73,000 acres during the two years preceding January 1, 1919, while its operated acreage had increased during the same period only 4500 acres.

The plaintiff sought to sustain its item of $31,778,111.42 added to its capital account, and claimed by it as a proper item of its rate base as the increased or appreciated value of its gas acreage, by the testimony of three witnesses, Mr. Wyer, its engineer expert, Dr. I. C. White, a geologist, and John Davidson, a producer and seller of gas, who is the same witness who testified both before the Commission and the Court, in the present proceeding.

Concerning the character of the evidence offered, Wyer testified to a valuation of $29,860,500.00, or an increase over investment cost of $23,263,276.00, upon the basis of the exchange or market value of said acreage. Dr. White fixed a valuation of $42,000,000.00, upon the assumption that the gas company was earning, at its present rates, a **profit of six cents** per thousand upon the gas it was producing and selling, and that it would

earn an equal amount upon the gas yet remaining in the ground, which he estimated plaintiff's acreage would produce before exhaustion. John Davidson fixed a valuation of $32,711,770.00, assuming that the company would make a profit of about 3½ cents per thousand cubic feet upon the gas which this acreage would produce. He added an additional $10,000,000.00 on account of the value of the extraction of gasoline from the gas contained therein.

The Commission defined the questions presented as follows:

> Assuming that the market or exchange value of applicant's gas acreage has appreciated to the extent claimed by its witnesses in excess of investment cost, is the applicant entitled (a) to capitalize such increased value and require its consumers to pay a reasonable return thereon; and (b) to require as well the creation of a reserve for depletion so as to amortize and return to the stockholders this appreciated value when such gas acreage is exhausted?
>
> Further, assuming that the gas company is entitled to add to capital account the accrued appreciation in the value of its gas acreage, can the Commission accept as the measure of that value a sum based upon either the market or exchange value of such acreage, or upon assumed profits that will arise from the sale of the gas contained in such acreage at a profit dependent upon rates, the reasonableness and propriety of which are in question, that is to say, can a basis of value be considered in a rate case which is dependent upon a rate fixed, or to be fixed, when the rates themselves are in dispute?

After pointing out the conflict which existed in the authorities at the time of this decision as to whether appreciation or unearned increment should be included in arriving at that fair value upon which a rate of return is to be based, the Commission points out that, even assuming the applicant entitled thereto in a proper case, yet under

all the authorities an estimate of value based upon earnings or upon market value which is determined by the rate of return or earnings, when the reasonableness of the return or earnings is in question, must be rejected.

As to the uncertainty of determining with any accuracy the amount of gas which can be recovered from land which has not been fully developed, the Commission used the following language which is interesting in view of Davis' attempted calculation of the gas content of the probable acreage:

> "An undeveloped oil and gas leasehold cannot fairly be regarded as tangible property. It merely invests the lessee with authority to enter upon the land, prospect for and acquire and produce oil and gas. Since these substances are hidden in the depths of the earth they are no man's property until by drilling they are discovered and taken into possession, nor can we forecast what the result of this exploration will be or what any given area of land will produce, either in the way of volume of gas or quantity of oil. Hence the business of exploring for and producing oil and gas is in its very nature, experimental and speculative, hazardous and uncertain. It is a matter of general knowledge that the value of prospective oil and gas territory can only be ascertained with any degree of certainty and accuracy when fully developed. Promising territory may prove to be unproductive and large production may be found in 'wildcat' or unproven fields. Therefore, on account of the uncertain and speculative character of gas leaseholds, and in view of the fact that there is a constant shifting, especially in the unoperated acreage of the applicant, due to the acquisition of new territory and the abandonment of old territory, we would, indeed, be invading the realms of uncertainty of speculation and

> conjecture to place upon the applicant's acreage any such valuation for rate making purposes as that claimed for it by its witnesses."

In the same connection, pointing out the large amount of acreage which had been abandoned during the preceding two years, the Commission said:

> "The injustice to present consumers that would result from allowing as capital charge the valuation per acre placed upon applicant's leaseholds by its witnesses may be graphically illustrated by reference to its operating experience since December 31, 1916. During that period it has surrendered and abandoned over seventy thousand acres of its unoperated leaseholds. Assuming that 20% of this abandoned acreage has been valued at $100 per acre or an equivalent of $20 per acre for 100% thereof as claimed by applicant's witness, Wyer, applicant's capital would be depreciated by reason of the surrender of this acreage, to the extent of more than $1,400,000 in round figures, and in the meantime, during the same period, applicant's consumers would have been paying a rate to include a fair return and depreciation upon this immense amount of capital, which, in fact, had ceased to exist.

The conclusion of the Commission was to allow the gas company to include as a part of its capital investment the actual cost of obtaining the gas acreage it then held, and to earn a return thereon until such time as such charge should be amortized and wiped out as a capital charge by a fund to be created for the purpose, by setting aside each year a reasonable sum for amortizing its leasehold investment. It directed that in future all normal expense, both of acquiring and carrying gas acreage, should be charged to operating expense and not added to capital account.

It modified its holding in Case 585, in which it held that only one-half of the applicant's investment in unoperated acreage should be included in its capital account, to the extent of permitting its whole investment therein to be included, for the reason that it did not affirmatively appear "that under present conditions applicant's investment in operated acreage is more than will reasonably be required to meet its future demands"

Case No. 1251 (Bulletin 70) decided April 28, 1922, was in effect an application for rehearing of the two former cases, Nos. 585 and 845. It is not reported in any volume of reports. The Company adduced no new evidence on leasehold valuation and the Commission deemed the contention of leasehold appreciation "at least for the present abandoned"

In the second hearing of the same case (Bulletin 82, P. U. R. 1924 A 357) in August, 1923, only the initial investment in natural gas leases and leasehold estates was included in the rate base. However, it was held that the gas company should be allowed the market value of the gas at the city gate as just compensation for its gas used in serving the public by way of what is called "depletion", also that delay rentals and royalties should be credited against the depletion fund because charged to operating expenses.

It was from this decision of the Commission, allowing an increase in rates of about five cents per thousand cubic feet, that the protestants appealed to the Supreme Court of Appeals of the State. *City of Charleston* v. *Public Service Commission*, 95 W. Va. 91. In a carefully considered opinion by Judge Meredith the question of appreciated value of leaseholds was discussed, together with other questions involved in this suit, considered elsewhere.

While the Court held that the gas company was entitled to a fair return upon the present fair value of its property ***used and useful*** in the public service, to be ascertained

as of the time the service is rendered, and consequently to have included in its rate base "appreciation in the value of its leaseholds over investment cost", it further held that evidence of such appreciated value "to be competent must not be based upon, but must be independent of, the rates of return and earnings". While recognizing the rule laid down by this court that a utility is entitled to a fair return upon the present fair value of its property used and useful in the public service and that such value includes gas leaseholds, the court, at page 105 of the opinion, points out in plain terms that because of the many elements of uncertainty and speculation which necessarily enter into all opinions regarding the value of such gas leaseholds, it is only under *exceptional circumstances* that such appreciation can be allowed. Upon this point the court quoted with approval the following language from the opinion of Commissioner Wiles in Case No. 845, heretofore referred to:

> "Whatever may be the differences of opinion, as shown by court and commission decisions, as to the ascertainment of fair value for other property of a gas utility, the many elements of uncertainty and speculation that must necessarily enter into all opinions regarding the value of gas leaseholds are so obvious and well known as to render it manifestly unjust and unreasonable to place any value upon such property in excess of its actual cost."

Commenting upon this statement, the court said:

> "Unless the circumstances be exceptional, we think this is true, and particularly so in a case like the present where the applicant is permitted to charge the rentals and taxes necessary to carry the leaseholds as an operating expense."

Applying these principles, the court held the plaintiff's evidence of appreciation incompetent, denied the right of

the company to add to the book cost of the leaseholds the sum of $31,778,111.42 representing the appreciation in value claimed by it, and reversed the order of the Commission allowing an increase of five cents in rates.

An analysis of this opinion shows that the evidence introduced by the plaintiff in the present proceeding is not substantially different from that reviewed by the Supreme Court of Appeals of West Virginia in this case. Mr. Davis' testimony in case No. 1251, as summarized by Judge Meredith, shows:

> (a) That Davis divided the leasehold acreage, to which he attempted to assign value, into only two classes, namely, (1) operated and (2) unoperated but proven territory, aggregating from 100,000 to 150,000 acres (p. 107).
>
> (b) He excluded at this time from his estimates altogether about 650,000 acres which he himself then called "wildcat" territory. This necessarily includes much of the acreage which he subsequently classified in the present suit as "probable".
>
> (c) As to the content of this so-called gas reserve, he estimates that the supply in the present wells was, on September 30, 1921, 123 billion cubic feet, referring to the operated territory.
>
> (d) He estimated that there was a reserve in the unoperated but proven territory of 228 billion cubic feet, making a total of 351 billion cubic feet (p. 108).

From the foregoing it appears that the evidence before the State Court in this case was less speculative than the evidence now under consideration. This is so because Mr. Davis, who testified in both instances, confined his estimate of the gas content of plaintiff's leaseholds and the value

thereof in said Case No. 1251 to only "proven" territory, while in this suit he has enlarged the scope of his estimates to include what he now designates as "probable" territory. As stated by Commissioner Stathers, (R. 101):

> "While Mr. Davis has gone into his subject much more exhaustively than he did in Case No. 1251, yet his theories and methods are not substantially or materially different. As quoted above 'his estimates are mere estimates and nothing more'. The fullness and elaboration with which such estimates are presented now does not change their character. Of this we are convinced. **Nothing has been added by Mr. Davis which makes his recent estimates any more reliable, dependable or certain than those which have met with the disapproval of this Commission and the Supreme Court of Appeals.**
>
> *Accord, Re American Indian Oil & G. Co.* (Okla. Com.) P. U. R. 1924 E 114.

As pointed out by Chairman Stathers, the testimony of all plaintiff's witnesses who testified in the present proceeding, including both its engineer expert Uebelacker and its practical gas men, is based largely upon the testimony of Mr. Davis as to the gas contained in plaintiff's leaseholds (R. 102). Therefore, if the theories and methods adopted by Mr. Davis in the present proceedings are not substantially or materially different from those which he used as the basis of his testimony in Case No. 1251, they remain speculative and unreliable for reasons pointed out by the State Supreme Court of Appeals. It is as true now as it was then that "while his methods of estimating gas reserves may be the best methods known, his estimates are mere estimates and nothing more".

In spite of the elaborate argument of the plaintiff to the contrary, we submit that an examination of this evi-

dence will convince the Court of the accuracy of Judge Rose's summary of the efforts of the plaintiff in the present suit, where, after referring to the valuation of its leaseholds by the plaintiff and its adding to its capital the sum of $31,778,111.42 for leasehold appreciation, he said:

> "In substance the instant case resolves itself into an attempt to convince us that in this matter the Commission and the Court were wrong."
> (Rose Opinion, R. 1251.)

(3)—APPLICATION OF BOYLE'S LAW.

Mr. Davis appears to assume as infallible the application of the principle of Boyle's Law. He applies it not only to the "proven" acreage, but in some degree to the so-called "probable" territory, which he admits to be a speculative and untrustworthy undertaking, and claims two-thirds of the total estimated gas content for the "probable" territory.

Even as to the 69,000 acres of producing territory there must be a considerable degree of speculation, and as to the undeveloped and untested acreage, it can have no application, because there are no wells to show the rock pressure therein. As applied to natural gas deposits, the use of the law is of "comparatively recent origin", (Davis, R. 241) and untried significance. It is admittedly of value only where there is no encroachment by surrounding water (R. 241) a contingency not to be disregarded in territory not yet drilled. Gas confined in rock and sand formations three thousand feet beneath the surface of the ground is surrounded by conditions much more speculative and uncertain than the same gas in a laboratory container.

It is said that the principle has been approved by the United States Internal Revenue Department in tax investi-

gations. The necessities of those cases render some method of valuation imperative, but that department only applies the law to actually proven territory.

> "A proven area for the purposes of this statute shall be presumed to be that portion of the productive sand or zone or reservoir included in a square surface area of 160 acres having as its center the mouth of a well producing oil and or gas in commercial quantities. In other words, a producing well shall be presumed to prove that portion of a given sand, zone or reservoir which is included in an area of 160 acres of land, regardless of boundaries. The center of such square area shall be the mouth of the well, and its sides shall be parallel to the section lines established by the United States system of public land surveys in the district in which it is located. Where a district is not covered by the United States land surveys the sides of said area shall run north and south, east and west."
>
> Paragraph 2 of Article 220 (a) Regulations 62.

Mr. Davis attempts to apply this department regulation to areas which the department itself does not recognize as susceptible of valuation. Indeed, he admits that even as to proven territory the Internal Revenue Department had reduced his estimates ten per cent. (R. 241.)

(4)—FUGITIVE CHARACTER OF GAS IN THE GROUND.

The strongest reason for exercising the strictest caution in attempting to estimate the volume of gas in the ground is the inherent quality of the gas itself. Unlike mineral substances such as iron and coal which occupy a fixed area, natural gas is essentially of a migratory and fugitive character. Following the course of least resistance it flows

from one point to another, and, like the animals to which it has often been likened, is in its nature *ferae naturae*, the property of one man today and another tomorrow.

"Until reduced to possession by confinement, natural gas, it is said, though somewhat inaccurately, partakes of the nature of *ferae naturae*. It is not the subject of ownership till brought to the surface and confined."

Suttle v. *Hope Natural Gas Co.*, 82 W. Va. 729, 738, 97 S. E. 433.

"It is apparent from this history of the nature and properties of natural gas, that it partakes more nearly of the character of the elements, air and water, than it does of those things which are the subject of absolute property. It is more volatile than the air, and when tapped in the earth it escapes more readily. When the supply is withdrawn from one place, it flows of its own accord from other points and replaces that which has been withdrawn. What distance or from what source it comes is the subject of conjecture only. The well or means of escape may be on one farm or in one county, and the reservoir or source of supply may be under other farms or in other counties more or less distant. Like water percolating beneath the surface, it may by sinking a well, or otherwise, be appropriated for the use of one person on his farm, while the supply may come from an adjoining or many distant farms. The right of appropriation is so absolute in the case of water flowing underground, that if the owner of land in digging a well or cellar or working a mine on his own premises cuts off the water, which by percolation supplies his neighbor's well, and thereby diverts it into his own or drains the well of

his neighbor, the latter is without remedy; it is *damnum absque injuria*, if not negligently or maliciously done. (Brown v. Illins, 25 Conn. 594; S. C. 27 Id. 94; Emporia v. Soden, 25 Kan. 608.)"

Wood County Petroleum Co. v. W. Va. Transportation Co., 28 W. Va. 210.

"Men may divide the moon by imaginary lines, but equity will not enforce their contract. They may divide the water in a well or in a brook, or the game in the forest or the fishes in the sea, but equity will afford them no such relief. 'Oil and natural gas are minerals, in the view of the law; but, because of their peculiar attributes, they, as the subject of property, differ from other minerals. * * * Out of possession there is no property in them. * * * They are not capable of distinct ownership in place, owing to their liability to escape from the place where they may be temporarily confined without necessarily any interference on the part of the owner of the soil, or others claiming through him, under whose land they may be found. Like water, they are not the subject of property, except in actual occupancy, and a grant of them passes nothing for which ejectment will lie. * * * Oil and gas cannot, while in the ground, like the solid minerals, be the subject of an estate distinct from that in the soil.' Barringer & A. Mines & M. pp. 30, 31. A grant to the oil and gas passes nothing for which ejectment will lie. Dark v. Johnson, 55 Pa. St. 164. So the reservation of the oil and gas is not of the oil and gas in the ground but of the oil and gas the grantor or his assigns may find and reduce to possession, with the exclusive right to search therefor. *Natural Gas is incapable of being absolute property, and is the subject of qualified*

property only. Wood County Petroleum Co. v. West Virginia Transp. Co., 28 W. Va. 210. 'A grant or reservation of oil or gas in certain land passes an incorporeal right only. This arises, as has been above explained, from the nature of oil and gas, which is such that a corporeal interest in them in place cannot be created'. Barringer & A. Mines & M., p. 78. 'There can be no property in rock or mineral oil, nor can title thereto be devested or acquired, until it has been taken from the earth.' Shepherd v. Oil Co., 38 Hun. 37. Oil and gas grants and reservations are incorporeal hereditaments, which are entire and indivisible at law though they may be made divisible by the terms of the grant. *Funk v. Halderman*, 53 Pa. St. 229."

Hall v. Vernon, 47 W. Va. 295, 34 S. E. 764.

Gas in the ground can always be drained from one leasehold by producers operating nearby lands. In fact the drainage may be accomplished by wells at a great distance. It follows, therefore, that the gas which today underlies the leases of the plaintiff may be diverted to others by the simple drilling of wells by other producers. Plaintiff insists that its particular holdings are compact and well protected. In a relative sense that appears to be true, but the naive method employed by Mr. Davis of simply totalling the area of lands held by the plaintiff in territory said by him to be "probable" altogether leaves out of account whether the component portions making up that total are well or insufficiently protected. The psychological value of a mental picture of two large blocks of leases, one of 130,000 acres of "proven" lands and another of 126,000 acres of "probable" lands was by no means overlooked by the plaintiff's witnesses.

The plaintiff omits to point out that all the while its leases are undrilled the company is at the mercy of competi-

tors and others who may at any moment contract with its lessors and thereby deprive the company of its holdings at the end of the stipulated term of its leases unless drilling is done successfully by it before the term expires. This is the common practice of "top-leasing". The effect of a strong competitor in the field was strikingly indicated by Mr. Davidson's twenty per cent reduction of his valuation estimate upon the entrance of the Hope Natural Gas Company into Southern West Virginia (R. 317).

The speculative character of the unoperated lands is reflected in the fluctuations of plaintiff's leaseholds. In 1917, when its case No. 585 was before the Commission, plaintiff controlled 770,034 acres of unoperated leases and 52,349 acres of producing leases, acreages not disproportionate to plaintiff's present holdings. Yet, during the period 1917-1923 the plaintiff abandoned 391,672 acres of leases (Jirgal Ex. No. 3 R. 1096). In other words, during that period approximately 50 per cent of its holdings were dropped either because they were deemed so worthless that it was considered not worthwhile to carry them longer, or they were lost to some competitor who secured the renewals at the expiration of plaintiff's leases.

(5)—LEASEHOLD RIGHTS DISCUSSED:

The quantity of gas lands owned by the plaintiff in fee is so negligible that neither the plaintiff's counsel nor any court or commission has ever attempted to separate the fee lands from the leaseholds. Practically all of its gas rights are held under leases, the character of which we have previously outlined. The fact that plaintiff holds leases only is a material circumstance in this case, one which has been deemed of importance by Commissioner Stathers, by Judge Rose and Judge Hickenlooper in the Kentucky case.

The Commission, not having the leases before it, was forced to call upon its general knowledge of such instru-

ments. Knowing that gas leases are frequently burdened with conditions and obligations, such as free gas to the lessor, the duty to drill a certain number of wells, forfeiture provisions, etc. (R. 109), Chairman Stathers very properly observed that it is upon these undisclosed terms and provisions that the value of the leases may depend (R. 111). Wherefore, he said that evidence as to the volume of the "gas reserve" or "gas content" without regard to the character of the leasehold rights could not be received upon the value of the leaseholds. He made the following reference to the legal effect of a gas lease in West Virginia:

> "Unless title to the gas has passed to the Gas Company, under the 'usual lease', it has no title to such gas and this Commission can not place a value upon the gas or gas acreage as such. The record shows that the Gas Company had 'leases or deeds in fee' for its gas producing territory as of December 31, 1923, which leases were 'alive at that time'. Such leases or paper pass no title in the gas to the lessee. The title to the gas remains in the lessor and continues as his property until it is extracted, when title vests in the lessee. The only right given to the Gas Company under its lease is the right to explore for oil and gas and to produce them when found. Always has this been the law in West Virginia, a clear expression of which is:
>
> > 'The ordinary oil and gas lease giving the lessee for a term of years the right to mine and operate for oil and gas is not a sale of the oil and gas in place and the lessee has no vested interest therein until it is discovered, but when found, the right to produce becomes a vested right and when extracted the title vests in the lessee, and the consideration for royalty paid

> for the privilege of search and production is returned for the leased premises.'
>
> *Hadley* v. *Hoopengarner*, 60 W. Va. 626."
>
> (Opinion of Commission, R. 109-110.)

This is well settled law in West Virginia, Pennsylvania and other states.

> *Smith* v. *Root*, 66 W. Va. 633;
> *Toothman* v. *Courtney*, 62 W. Va. 167;
> *Hall* v. *Vernon*, 47 W. Va. 295;
> *Steelsmith* v. *Gartlan*, 45 W. Va. 27;
> *City of Erie* v. *Pub. Ser. Com.*, 278 Pa. 512; 123 Atl. 471, 474;
> *Pennsylvania* v. *West Virginia*, 262 U. S. 553, at p. 586.

It has been held that these decisions constitute a rule of property.

> *City of Erie* v. *Pub. Ser. Com.*, *Supra*.

We understand that the rule in the Federal Courts is that such decisions involving the rights of property "constitute rules of property and must be accepted and applied in passing on complainant's rights."

> *Guffey* v. *Smith*, 237 U. S. 101.

Judge Hickenlooper accepted this view:

> "Another objection to applying the basis adopted by Mr. Uebelacker is that it presupposes ownership by the complainants of gas in the ground prior to recovery. Practically all of this class of property is held by the complainant under gas leases which convey no interest in the real estate, but give only

> the right to explore for and extract natural gas. Not only are percolating waters and oil and unrecovered gas in the ground not the subject of ownership until recovered, but, if the subject of ownership, such gas is the property yof the owner of the fee until recovered. Not only has such gas no value unrecovered in the ground, but such value as it might have would seem to be the property of the lessor."
>
> *United Fuel Gas Co.* v. *Railroad Commission*, 13 Fed. (2d) 510, 519.

We think that the real significance of the expressions of the courts which have considered this matter is that it must not be overlooked that plaintiff does not own and may never own the gas underlying the thousands of acres of undeveloped leases held by it. The title to the gas, in so far as there may be ownership of so shifting and uncertain a substance as natural gas, remains in the lessors. They pay the property taxes thereon. The plaintiff owns the lease, the right to explore, a right subject to loss upon the happening of any one of many contingencies, some of which it is beyond human power to forestall. It necessarily follows, therefore, that the value of the gas content, even though it could be accurately estimated, is not the equivalent of the value of the intangible rights of the plaintiff.

There is no certainty that the company will be able to bring to the surface the estimated gas now underground, even if the estimated quantity be approximately correct. To include in the rate base of this company the estimated supply of gas appraised on any of the bases proposed by plaintiff is equivalent to charging the public with a return on property not owned by the plaintiff and which is illusory, intangible and fugitive in character. Conceding, for the purpose of the argument, the utmost which plaintiff can claim, **the problem is to determine the**

present value of the plaintiff's right to extract the gas under its leases and not to find the value of an estimated and uncertain volume of gas, the possession and ownership of which can be secured only by drilling and bringing it to the surface.

> "The value of gas lands for rate making purposes is not the sale price of a cubic foot of gas, as applied to the supposed quantity in a given field, but the reasonable market value of the whole tract or tracts from which the gas is produced."
>
> *American Indian Oil & Gas Co.* v. *Poteau*, (Okla.) 235 P. 906, P. U. R. 1926 A 236, Citing *City of Erie* v. *Public Service Com.*, 278 Pa. 512, 123 Atl. 471, P. U. R. 1924 D. 89.

Plaintiff no doubt will reply that it was for the purpose of fixing the value of the leases as such that it introduced its so-called practical gas men, whose testimony we have outlined briefly. Subsequently we shall attempt to point out the inherent defects in their testimony.

(6)—DAVIS' VALUATION OF ESTIMATED GAS CONTENT:

By methods already explained, Mr. Davis estimated the amount of gas which could be delivered from the gas reserves during the next eighteen years at 663,700,000,000 cubic feet. He assumed that *all of this gas* could be sold to steel mills in Pittsburgh, where there would be a large demand for natural gas in the place of soft coal, which it is claimed plaintiff could supply were it in position to abandon its retail consumers and deliver all of its gas to the steel mills there. He next made a comparison between the cost of manufacturing steel by the use of coal and by the use of natural gas, and upon the basis of that comparison gave it as his opinion that if the plaintiff could deliver its entire output in Pittsburgh it

would be worth not less than 35 cents per M cubic feet. (R. 244.) He next accepted the cost of transporting gas from Cedarville on the state line to Pittsburgh ($0.0526 per M cubic feet) and line loss ($0.0175 per M cubic feet) as estimated by Mr. Uebelacker. (A pure speculation as plaintiff owns no pipe lines in Pennsylvania.) Deducting the sum of these items ($0.0701) from the estimated Pittsburgh price of 35 cents per M cubic feet, he arrived at a net value of the gas at Cedarville of 27.99 cents per M cubic feet. (R. 970.)

He then estimated the probable sales of gas in cubic feet for the years 1924 to 1941, inclusive, and the revenue therefrom, which he reduced to a unit basis, the unit being one thousand cubic feet. The cost of production and transportation to Cedarville was fixed at 8 cents per M cubic feet, this figure being based upon the alleged cost of $0.07989 for the year 1923. He added ¼ of a cent each year to represent the supposed rising trend in production costs. Deducting this production cost and the transportation cost and line loss from Cedarville he arrived at a sum which he termed the net earnings per M cubic feet for each year of the eighteen-year period, ranging from 16.845c for 1924 to 14.247c for 1941. Applying this unit of net earnings to the total sales, he determined the annual net earnings in dollars. To this total he applied a compound discount factor based upon 8 per cent value of money. By this method he fixed the present worth of the net earnings at $56,582,799.00. As plaintiff's investment in wells and pipe lines were in part responsible for this present worth of earnings, he deducted the depreciated reproduction value of those items, as estimated by Mr. Uebelacker, ($19,723,409), and the estimated federal taxes, amounting to $4,401,261.76, and fixed the present value of the gas rights alone at $32,458,129.17. (Davis "Exhibit Z", R. 971-3.)

Aside from the numerous assumptions upon which this method of valuation is based, it is subject to the funda-

mental objection that it is premised upon the estimated cost of the next available substitute fuel, soft coal, or artificial gas produced from soft coal. He thus introduces into the problem the market value theory of valuing a public utility property. It is another illustration of the vicious circle of pyramiding of prices based upon corresponding increases in value of available substitutes. Plaintiff now asks that the price of its gas be increased because of the current price of soft coal and producer gas. If its demands be allowed, the producer of the substitute fuel, artificial or producer gas, in turn increases his prices because of the market price of gas as an available substitute, and so on until the market will bear no more.

Similar theories criticized in *Re Western States Gas & Electric Co.* (Cal.) P. U. R. 1924 D 681.

As pointed out by Mr. Hagenah:

> "This same theory was at one time advanced by the owners of other natural resources devoted to public service, notably water power companies, railroad facilities, etc. It is the settled practice of utility commissions in rate inquiries not to consider the earning power of the utility as the basis on which to determine the value of that property for the use of which reasonable rates are to be prescribed. To adopt the earning power as the measure of value of a natural monopoly on which a reasonable return may be earned is but to reason in a circle, a fallacy which has long been recognized by regulatory bodies and rejected by state and Federal courts and the United States Supreme Court. Railroads have never received official sanction for rates based on the cost of performing the same service with a substitute facility, or on the basis of 'what the traffic would bear.' Owners of water power devoted to public utility service have never been permitted to capitalize their natural

resources on the basis of the total savings in such business as compared with performing the same service with steam generation facilities. There is no process of reasoning by which owners of natural gas deposits can capitalize the advantages which such natural resources provide as compared with the cost of artificial gas."

(Hagenah "Exhibit No. 2", R. 1179.)

A further objection to Mr. Davis' application of the exchange theory to natural gas is that in founding its value upon artificial gas, he employs for his comparison a commodity the market price of which in the Pittsburgh industrial district is necessarily dependent in large part upon the regulated price of natural gas in the same territory. To this extent Mr. Davis disregards the decisions of practically all courts which have dealt with the question.

State ex rel. Springfield Gas & Electric Co., (Ill. Sup. Ct.) P. U. R. 1920 C. 640;

People ex rel. Kings Lighting Co. v. Willcox, 210 N. Y. 479;

Fuhrmann v. The Cataract Power & Conduit Co., (N. Y. P. S. C. 2d Dist.) Commission Leaflets 18, p. 1015;

Simpson v. Shepard, 230 U. S. 454;

Logan v. Bismarck Water Co. (N. D.) P. U. R. 1923 B at 508.

We submit the following statement of Mr. Hagenah is sound:

"In a natural gas rate case exchange value cannot logically be a valuation factor, since exchange value depends upon the net income, both present and prospective, and that income in turn depends on the rate to be charged, the amount of gas in the reserve and the cost of its delivery. Exchange value

being dependent upon the rate, it follows that such relationship cannot be the subject of inquiry in a rate case. To base the rate upon the exchange value in this case would be merely to continue the assumed rate, and this condition would obtain so long as such rate was not disturbed. If a change in rates affects the income, it correspondingly affects the exchange value, and if the rate can be arbitrarily fixed by the cost of supplying a competitive and substitute service, the exchange value is thereby also fixed. Courts have stated in language that admits of no misunderstanding that exchange value is not a factor in arriving at the fair value of public utility property for rate purposes. In disregarding judicial interpretation on this point, Mr. Davis assumes the correctness of one of the main factors in issue in this case, namely, the rate."

(Hagenah, "Exhibit No. 2", R. 1178-79.)

Should we accept, for the purpose of the argument the valuation theory of Mr. Davis, his statements and conclusions are not supported by data or facts. The costs of artificial gas and soft coal used by him are predicated upon the market price of coal as of December 31, 1923, shown to be approximately $4.00 per ton delivered in Pittsburgh. Mr. Hagenah's "Exhibit No. 3" (R. 1194) is a convincing refutation of any conclusion based upon an assumed price of coal over an extended period of time. The assumption that the market price of coal will be stabilized on the price level of December 31, 1923, is not supported by the history of the bituminous coal industry, the conditions of supply and demand prevailing at that date, nor by the economic forces operating in that business. Recent improved methods of production and distribution of coal necessarily presage reduced operating costs and a corresponding downward trend in prices. The factors contributing to this downward movement, over-develop-

ment, competition in non-union fields, cheaper freight rates, improved transportation facilities, reduced mining costs, competitive fuels, are all exhaustively reviewed in Mr. Hagenah's Exhibit (R. 1194-1209), consideration of which sustains the conclusion reached by him (R. 1208) that the valuation of Mr. Davis founded upon an assumed continuance of the price of coal as of December 31, 1923, is clearly excessive.

The "advantageous" market referred to by Mr. Davis, the steel mills of Pittsburgh, is no more stable than the price of bituminous coal. No industry in the United States is subject to more frequent and wider fluctuations in the demand for its product than is the iron and steel industry. (See diagram, R. 1181). To use Mr. Carnegie's phrase, it is always either "prince or pauper". The maximum demands of the iron and steel business in periods of great prosperity would far exceed the capacity of the plaintiff, but would fall below it in the cycles of depression. **The only stable market open to the plaintiff is the market it now supplies, its public service consumers.** The broader public interest requires that the wholesale industrial consumption give way to the domestic market. It is in distinct recognition of this fact that the steel industry has definitely turned away from natural gas as a fuel and now relies almost wholly upon coal for its fuel supply. This Mr. Davis admits. (R. 964-5.) That the plaintiff, if it could legally do so, would abandon its present stable and safe public service market for the uncertainties of the steel industry is unbelievable. (Hagenah, R. 1180-1182.)

Mr. Davis' theory further assumes the abandonment of that part of plaintiff's present physical property which would not be used if the entire output of gas were delivered to the Pittsburgh market; nevertheless, he makes no allowance for the losses growing out of such abandon-

ment, appraised by Mr. Uebelacker in excess of $12,000,000. (R. 1187.)

Going a step further, we find that Mr. Uebelacker has estimated the cost of delivering the gas from the field to Cedarville at 17.552 cents per M cubic feet. Deducting this amount from the Cedarville price of 27.99 cents, the value of the gas in the ground is 10.438 cents. Mr. Uebelacker has made a study, which he considers exhaustive, of the value of gas in the ground, and he finds that this value is five cents per thousand cubic feet. Mr. Davis, however, in order to justify his value of the gas rights, refutes Mr. Uebelacker's estimate of the fair market value of gas in the ground, and states that it should be ten cents instead of five cents.

With a few contracts which he said were representative of the value of gas in the ground, Mr. Uebelacker could not arrive at a value of the gas in the ground higher than five cents per thousand, and yet Mr. Davis, by taking a far away market, reaches a value over twice as high as that of Mr. Uebelacker. Either one or the other of these two gentlemen has made an erroneous estimate of the value of gas in the ground, otherwise the mere delivery of such gas in Pittsburgh has added an additional five cents to its value in the ground. Judge Rose called attention to the remarkable closeness of the answers reached by these two experts to the problem of the value of the plaintiff's gas reserves, notwithstanding one used a price of 30 cents per M c. f. and the other 35 cents, for the same quantity of gas delivered at the same point:

> "It will be recalled that Mr. Davis, although he dealt with the problem in a radically different way, arrived at almost precisely the same valuation. His figures were $32,458,129.17. The difference between him and Mr. Uebelacker is only $726,870 or less than 2½ per cent. This agreement would be very impressive, were it not that each bases his figuring

upon what he assumes is the price which can be obtained for gas at Pittsburgh. Unless one or the other or both of the methods used are fallacious, a concurrence of result would have been impossible unless they had been at one as to the one factor which was common to both. Now it is a striking illustration of the uncertainty of such calculations as they have severally made that, instead of agreeing as to the Pittsburgh price, Mr. Davis assumed that it was and would be 35 cents per M c. f., while Mr. Uelselacker estimated it at 30 cents. This price is to be paid at intervals over eighteen years, and Mr. Davis has figured for us that every dollar so received has a present worth of 61.64 cents, so that an average difference of 3.082 cents on the present worth of each thousand feet of plaintiff's reserves or for the 663,700,000 M c. f. of $20,455,-244. As Mr. Uelselacker based his calculation upon a price of 30 cents at Pittsburgh, his totals should have been that much less than those of Mr. Davis, who more optimistically assumed that 35 cents a thousand could be obtained at that point for it. We have seen that in fact they were $7,26,870 more."

(R. 1260.)

As already stated, Mr. Uelselacker assumes a value for gas delivered at Cedarville of 22.812 cents per thousand cubic feet, while Mr. Davis says that the value at Cedarville, on the basis of 35-cent gas at Pittsburgh, would be 37.99 cents. There is a difference, therefore, of over five cents in the value assumed to apply for gas delivered at Cedarville.

If Mr. Uelselacker is correct as to the value of plaintiff's gas at Cedarville, then the substitution of that price in

Mr. Davis' calculation of the value of the gas rights results in a considerably less value being shown. To show this we have modified Mr. Davis' calculation as follows:

Average Net Value per M cubic feet on basis of $91,792,894.00 Income to be realized before amortization from sales of 674.7 billion cubic feet during years 1924-1941 inclusive, in cents	13.605
Deduct—Excessive market value shown to have been used by Mr. Davis	5.00
Average Net Value after Adjustment	8.605
Expected Net Income before Amortization on basis of average net income of 8.605 cents per M cubic feet to be realized from sales of 674.7 billion cubic feet	$58,057,887.77
Compound Discount Factor necessary to Convert to Present Worth	61.64%
Present Worth of above Expected Net Income	$35,787,927.21
12½% of Earnings, Income Tax ($58,057,887.77—$35,787,927.21)	$ 2,783,745.07
Market Value of Gas Content	$33,004,182.14
Deduct—Depreciated Value of Property included other than natural gas fee and leasehold property necessary to deliver gas to market	$19,723,409.00
Market Value of Natural Gas Fee and Leasehold Property	$13,280,773.14

(7)—CRITICISM OF UEBELACKER'S VALUATION OF GAS CONTENT:

Since Mr. Uebelacker made no independent estimate of the gas content, his valuation of plaintiff's gas rights rests wholly upon the Davis estimates. We have outlined briefly his methods, and have pointed out objections thereto. It will be recalled that in addition to assuming the presence of 603.1 billion cubic feet of gas in plaintiff's leaseholds, Uebelacker undertook from illustrative sales contracts to determine (a) the prevailing market price, and (b) the total cost to the plaintiff of producing an equivalent supply of gas under delivery conditions similar to those of said sales contracts, including depreciation, amortization and a fair return.

This theory *necessarily contemplates the consideration of a sufficient number of contracts to establish beyond a reasonable doubt the fair market value of the gas*, also an accurate analysis of the production and maintenance costs of the plaintiff. The fact is that Mr. Uebelacker referred to only five sales contracts, the contracts not appearing in evidence and the quantity of gas embraced therein not appearing, and to a hypothetical sales price in the Pittsburgh industrial market. The prices so shown were considered illustrative and probative of the fair market value of gas in plaintiff's fields. Mr. Uebelacker next estimated the cost of production to the plaintiff of supplying an amount of gas equivalent to that required by these contracts. In the case of the International Nickel Company, South Penn Oil Company, Owens Bottle Company and Falling Rock Cannel Coal Company, he fixed the production cost at $0.05431 per M cubic feet. This cost included operating expense, royalties, general expense, depletion and a return of 8% on the deteriorated value of the wells and well lines as of December 31, 1923. (R. 5236.) The estimated unit cost of supplying the Pittsburg industrial market and the Hope Natural Gas Company at

Cedarville was arrived at similarly, but involved much more elaborate estimations of tranportation costs and line loss to Cedarville and from the latter point to Pittsburgh over lines not in existence. The result of these calculations is fully shown in the following table:

	Contract Price	*Production Cost*	*Value per M Cubic Feet of Gas in Ground*
Purchase in field by Owens Bottle Works, Charleston, W Va	$0.10	$0.05431	$0.04569
Purchase in field by International Nickel Company, Huntington, W Va	0.17	0.05431	0.11569
Delivery at Pittsburgh Industrial District	0.30	0.22812	0.07188
Purchase in field by South Penn Oil Company	0.08	0.05431	0.02569
Delivery to Hope Natural Gas Company and West Virginia Central Gas Company, at Cedarville by United Fuel Gas Co	0.2266	0.17552	0.05108
Purchase of "Dry" (gas) in field by United Fuel Gas Co Co from Falling Rock Cannel Coal Co	0.085	0.05431	0.03069

"Based upon a review of these results," Uebelacker arrived at an average value of plaintiff's gas in the ground of five cents per thousand cubic feet, which he applied to Mr Davis' estimate of gas content. He made no attempt to reduce his estimates to present values, but by the simple method of multiplication he fixed the value of the

"proven" at $12,445,000 and the "probable" at $20,730,000. Neither Mr. Uebelacker nor Mr. Davis consider the fact that in the year 1923 plaintiff purchased 9,669,753,000 cubic feet of gas at an average price of 0.4 cents ("Jirgal Ex. No. 5," R. 1137.)

Admitted facts challenge the trustworthiness of Mr. Uebelacker's figures. The plaintiff delivers gas daily in Huntington, West Virginia, at 21 cents per M cubic feet, yet the fair market price for gas delivered there, according to Uebelacker, is 20 cents (R. 526), the amount fixed by the contract of the International Nickel Company. *In other words, plaintiff is attempting to justify a rate increase based upon the alleged value of its gas in the ground, although such alleged value is predicated upon a selling price less than that permitted under existing rates.* If the independent producer which supplies the International Nickel Company earns a profit of 11.569 cents per M cubic feet, it is doubtless largely due to the fact that plaintiff's price of 21 cents, now permitted by the Commission, establishes the standard in that locality.

We have fully discussed the Pittsburgh industrial market in our review of Mr. Davis' valuation methods, and shall say no more concerning it. Plaintiff's price to the Hope Natural Gas Company and the Pittsburgh and West Virginia Gas Company, and its use of that price as a basis for rate increases are interesting. Public utilities purchasing gas from the plaintiff include the cost of gas purchased in their operating expenses, upon which the rates to their own customers are in part predicated. The result is a striking example of the pyramiding of rates. While the buyer builds its rates upon the cost of its supply, the seller, also a public utility, builds the rates to its patrons upon the price of that gas which it is able to secure from other utilities purchasing from it. Mr. Hagenah correctly

appraised the situation in the following observation relating to Mr. Davis' testimony as to the wide market for plaintiff's gas in other states:

> "I have examined the report of Mr. Davis in which he says that as an alternative to selling gas in the Pittsburgh district his valuation is sustained by the further fact that this company now has transmission mains connecting it with many other cities where it is possible to obtain higher rates for gas, and that to the extent of these other communities or markets being willing to pay a higher price for gas, the value being sustained thereon should be included in the rate base, and serve as a justification for increased charges against the cities and consumers in West Virginia. That is another form of exchange theory. It merely amounts to this. If in Pennsylvania, Ohio and Kentucky, where the natural gas resources are not so well fixed and extensive as they are in West Virginia, they are, because of the higher cost of fuel, willing to pay for this rich product a higher price as determined by their next available sustitute measure, the saving between the price which they are willing to pay and which the community here has been paying may be capitalized against this public. That has operated in this form. When the cities in Ohio and adjoining states pay a higher rate, the gas companies ask the people of this community to pay higher rates or the gas will be piped out of the State of West Virginia. When the cities in West Virginia pay a higher rate the gas companies say to the cities in other states: 'If the gas companies can sell their product at home there is no incentive for piping the gas a long distance, and they must have the higher rates at distant points.' When these rates are granted, the statement is made to

other cities, 'Unless you pay as high a rate as these cities are paying we will sell our gas where we can get the largest price.' This practice has resulted in a vicious circle, and Mr. Davis is capitalizing the natural gas reserves on the theory that that vicious circle constitutes an economic justification and support for the value which he has found, and using that theory as measuring the saving in this field."

(Hagenah, R. 433-434.)

The Court already may have noted the variance between the allegd market price of gas in the fields and in distant markets. Local buyers pay from 8 cents to 10 cents per M cubic feet. It appears that the field price, or the price at the point of production, yields a value for gas in the ground much lower than the average of 5 cents estimated by Mr. Uebelacker. Even considering the fact that in each instance the production costs *of the plaintiff* have been used rather than those of the particular seller who was a party to the contract in question, the value of the gas in the ground, as measured by the contracts for nearby delivery, is more nearly 3 cents per M cubic feet than the 5-cent average of Mr. Uebelacker. Other elements than mere transportation cost enter into the value of natural gas at points distant from the producing field. The only contracts of those listed by Mr. Uebelacker which in any degree indicate the value of plaintiff's gas are those for field delievery, and which indicate a value in the ground of about three cents per thousand cubic feet.

(a)—*Gas Purchased Theory of Judge Rose.*

Mr. Hagenah, in his "Exhibit No. 4" (R. 1209-1216) points out several objections to Mr. Uebelacker's methods. We will review only one. Mr. Uebelacker allowed a return of 8 per cent upon the value of the gas content as

estimated by him in addition to an amortization charge. This is incorrect. To apply his theory properly he should have added to the operating expenses of the plaintiff the sum of 5 cents for each thousand cubic feet withdrawn and allowed no further charge for return on investment in the leases or for their amortization. There can be no charge in the operating expenses for return or amortization on the gas in the field after that drawn out has been charged at its fair market value. If the gas taken out is valued at 5 cents per thousand cubic feet, that amount, plus the direct operating expenses, must be inclusive of all charges pertaining thereto. The owner cannot sell his product at the market price and then seek to obtain in addition another charge to cover the return on his investment and amortization. This is precisely the idea in the following suggestion of Judge Rose:

> "If it bought from some one else the gas which it distributes in Charleston, Huntington, and other West Virginia places, what it paid to the seller would form a part of its operating costs, at least whenever it and the seller had no connection with each other and dealt at arm's length. In that event, the value of the gas reserves owned by the concern which sold the plaintiff gas would have nothing to do with the value of the latter's property, used and useful in the public service.
>
> "Is it clear that the situation in this respect is different merely because the plaintiff owns the gas it furnishes? If it is not, we are not here concerned with the valuation which may be placed upon plaintiff's gas reserves or upon any important part of them. Upon the assumption suggested, commissions and courts, when called upon to deal with the rate which the plaintiff is entitled to charge, would, as in other like cases, have to determine the value of the plaintiff's tangible

property used in the public service, including therewith a sufficient allowance for working capital and going concern value. The total of these items would represent all upon which it would be entitled to earn a return and all upon which any allowance for depreciation and amortization should be made. Having determined what the plaintiff's gross income is, precisely as they would in any event have to determine it, they would add the fair market value of the gas it delivers to its public service customers to what they had ascertained to be its outlay for operating expenses and taxes. It would then be necessary to determine whether such net income as so calculated, after making proper allowance out of it for depreciation and amortization, was sufficient to yield plaintiff a fair return upon the value of its property. However plausible this view may be, it does not seem to have occurred to any of the parties to the cause nor to any of the learned counsel engaged in it. So far as we can recall, no reference has ever been made to it by the Commission nor by the Supreme Court of Appeals of the state. The presumption against it is therefore strong, but on the other hand, it has something of apparent reasonableness about it, for West Virginia cannot require plaintiff to sell its gas in the state if it can get a higher price elsewhere. *Pennsylvania v. West Virginia*, 262 U. S. 553, 559, 43 S. Ct. 658, 67 L. Ed. 1117, 32 A. L. R. 900. If it be sound, there will be no need to seek a solution of a number of problems which are difficult or impossible to solve. At present we do no more than propound it, so that in the further proceedings in the cause, it may be given such consideration as it may merit, if indeed it be worth any at all."

United Fuel Gas Co. v. Public Service Commission, 14 Fed. (2d) 209, R. 1265.

Mr. Hagenah made use of this very principle in his Exhibits No. 6 and No. 6-A. (R. 1222.) In the statement there shown there is substituted for all of the company's leasehold expenses a value of 5 cents per thousand cubic feet for the gas taken out of its producing territory during the year 1923. In other words, the gas which was reduced to possession during that year has been valued at the high fair market price assumed by Mr. Uebelacker, and included as an operating cost. All leasehold value is then, of course, eliminated from the rate base. Here all speculation as to whether the gas will be produced and delivered is removed because the actual amount of gas which the applicant reduced to possession during that year is known. As already pointed out, it is the actual reducing to possession of a commodity which is necessary to the application of any fair market price. This statement of Mr. Hagenah's shows that by using even the high fair market price of Mr. Uebelacker, the company in the year 1923 earned 19.38 per cent for return, depreciation and amortization on that part of its investment (reproduction cost new less depreciation basis), which is exclusive of the leaseholds. Even if, as contended by the plaintiff, such fair market price is exclusive of the gasoline extraction privilege, there would still be available for return, depreciation and amortization on the cost of reproduction new less depreciation, an amount equivalent to over 15%. Nothing in the record supports the conclusion that the fair market price is as high as 5 cents per thousand cubic feet, and there *is* evidence in the record, as already shown (R. 408), which shows that excluding the gasoline extraction privilege, the fair market value of the gas is much less than 5 cents per thousand cubic feet—certainly not more than 3 cents per thousand cubic feet.

The protestants, therefore, contend that the most practical application of Mr. Uebelacker's theory is to include in the operating expenses, 5 cents for each thousand cubic

feet of gas which the applicant has reduced to possession in any given period, and to deduct from such operating expenses any expenditures connected with the source of supply, that is, the leaseholds. This Mr. Hagenah has very effectively done in his statement at page 1222 of the Record.

In summary of Mr. Uebelacker's theory, the following criticisms are pertinent:

(a) That he assumed that all of the recoverable gas content estimated by Mr. Davis would ultimately be delivered to the consumers, while there is no certainty or even probability that such will be the case.

(b) That he assumed that the fair market value of the gas in the ground was 5 cents per thousand cubic feet, notwithstanding it appears that large quantities of gas are at present being purchased by the plaintiff and others at prices indicating a value in the ground considerably less than 5 cents.

(c) That he gave no consideration whatever to the fact that the seller of the gas must deduct from his rate of 5 cents per thousand for gas in the ground, his delay rentals, leasehold expenses, federal taxes and depletion.

(d) That he assumed that a present fair market value of 5 cents per thousand today, spread over the deliveries in the next eighteen years with payments being made at 5 cents during the entire period, should not be reduced to present worth — Mr. Davis shows that the present worth of a future expected income necessary to provide an 8 per cent return in the interim, results in a present price which is only 61.64 per cent of the actual price, in other words, that a fair price of 5 cents paid for gas delivered over 18 years is equivalent to a present price of substantially 3 cents per thousand cubic feet.

(e) That he used throughout his calculations the lifting costs of the plaintiff instead of the lifting costs of the sellers of the gas.

(f) If the value of the gas reduced to possession in 1923 is included in the operating expenses at Uebelacker's figure of 5 cents per M cubic feet, the plaintiff still earns an ample return on the fair value of its property exclusive of leaseholds.

(g) The estimated Pittsburgh price takes no account whatever of the inevitable result of dumping into that market approximately forty billion cubic feet of gas per year. If such a market value exists there now as is testified by Mr. Uebelacker, it is because of the scarcity of gas there. If such an unregulated market were suddenly flooded with gas, it is manifest that the price would decline. This criticism applies equally to the valuation theories of Mr. Davis.

Taking into account certain of the foregoing criticisms, we have modified Mr. Uebelacker's calculations as follows:

663 billion cubic feet at 3 cents	$19,890,000
Present worth of a future expected income of 3 cents per M cubic feet (Davis factor of 61.64%). See Judge Rose R. 1260	12,260,196
Add: Leasehold cost of 502,319 wildcat acres at basis cost for 1923, or 83 cents per acre. Jirgal, R. 1161	458,425
Uebelacker's Valuation after making proper adjustments	$12,718,621

(8)—THE TESTIMONY OF PRACTICAL GAS MEN.

The apparent purpose of introducing Mr. Sullivan, Mr. Corrin, Mr. Gregory, Mr. Womack and Mr. David-

son was to attempt to establish a valuation of the leaseholds not based upon their gas content. It will appear from their testimony, however, that practically every one of them had some personal knowledge of the amount of gas which Mr. Davis estimated was in the ground.

These men were all associated with gas development companies and professed to be familiar with the price of gas lands in the market. Their positions in the gas industry were such, however, as peculiarly to affect their estimates of the value of the property of the United Fuel Gas Company. Mr. Sullivan and Mr. Corrin were each vice-presidents and executive officers of the Hope Natural Gas Company. (R. 280, 284.) Mr. Gregory was president of the Manufacturers' Heat & Light Company. The Hope Company is a large purchaser from the plaintiff. In 1923 it purchased 3,416,000 M. cubic feet. (R. 1134.) The Manufacturers' Heat & Light Company in turn buys from the Hope. (Gregory, R. 293.) In addition, both of these companies operate large gas fields in West Virginia, and the Hope, in particular, has extended its production system into territory adjacent to that of the plaintiff. Both companies are public utilities selling natural gas to domestic consumers at regulated prices. Mr. Womack was personally engaged in gas production in those counties where plaintiff's most extensive and valuable leases are situate (R. 303), and Mr. Davidson was directly associated with several companies whose chief business was the production of gas and the sale thereof to the plaintiff, the Hope and plaintiff's parent, The Columbia Gas & Electric Company. (R. 307.) Upon cross-examination before the District Court, he admitted that "there is a stipulation in his contract with the Columbia Gas and Electric Company that the price will be increased in the event of an increase allowed by the Public Service Commission for gas in the territory from which it is taken." (R. 317-318.) It is by no means difficult to see what the natural disposition of each of the gentlemen

naturally would be as to the value of the commodity in the production and marketing of which they are so vitally interested.

The values assigned by these witnesses to the gas rights of the plaintiff, can be justified only because they can resell such gas to their present consumers located at far away points, at a substantial profit.

It is a matter of common knowledge in the natural gas field that the farther the distribution systems are from the point of gas production, the higher the price which can be secured in the ultimate market. This is true because as the supply of gas becomes less and less, the markets which are farthest away are the first which must abandon the use of natural gas.

The secret of these excessive estimates lies in the fact that the basis of the judgment of every one of these witnesses was the present tremendous earning power of the plaintiff in existing public utility markets. The very nature of their business experience and the situations of the plaintiff and of the companies in which the witnesses were interested in the public utility business were all such as to render it a practical impossibility for them to disassociate the market value of gas from its value in the only business in which all of the companies in question are engaged. Mr. Sullivan (R. 282), Mr. Corrin (R. 288) and Mr. Gregory (R. 294) attempt to say that their estimates relate to value in an unregulated market. Reference to their various statements as to the factors considered by them demonstrates, however, that it was only the public utility demand and the earnings of the plaintiff in the public utility market which directly or indirectly gave the value to plaintiff's property concerning which they were testifying. Any other market existed only in speculation. That this is true is best supported by the record of their testimony, from which the following statements are illustrative.

"That by the fair value of the gas property he means that he thinks that the proven territory and the possible territory adjacent to the proven territory is worth that amount as a producing field for a gas company, considering what it could obtain for the gas, and the knowledge that he has of the operations and of the field enables him to put that value on it, excluding the wells themselves, that the gas could be sold, in his opinion, for such an amount as would give to those properties that value; that the cost of carrying the leases was not considered by him and is not an element in his estimate; that the price of gas considered by him in fixing his value upon said property was the *price said gas is selling for in the market today*." (Corrin, R. 288.)

That he saw the engineer's figures as to the amount of gas which would likely come out of the property, 663-billion cubic feet, but that his valuation *wasn't based entirely on that*." (Corrin, R. 289.)

That he had information as to the acreage, number of wells, amount of gas produced and sold from this territory during the last ten years, the selection of the acreage with reference to the possibility of marketing the gas in Pennsylvania and Ohio, the general demand for gas in those states and after considering all these varying different items he arrived at the value which he gave to the gas territory.

"That in his opinion the value of the gas reserves for natural gas purposes alone of the United Fuel Gas Company is in round figures $34,000,000, that that is what he considers a prudent purchaser who desired to buy the property ought to be willing to

pay to a willing seller therefor." (Sullivan, R. 281.)

"That the estimates of value which he has put upon the leaseholds of the gas reserves of United Fuel Gas Company are based largely upon the market for natural gas in Pittsburgh and in other territory adjacent thereto." (Gregory, R. 299.)

That his valuation was put "upon the theory that there was at a certain point and in a certain territory a demand for gas and that by reason of that demand or the necessities of the public utility that desired the gas they would be willing to pay cetain prices in order to get it and the value of the property is determined largely by the rate of which you are abe to sell the gas." (Gregory, R. 300.)

"That he could form an opinion of the value of this gas territory *based on what is received for gas*, which is one factor, and the demand for gas in the different fields, that in his judgment the gas territory owned by the United Fuel Gas Company, aside from the plant of the company—leaving that out of consideration—would be around $45,000,000." (Womack, R. 304.)

"That he arrived at the figure of 4½ cents per thousand cubic feet because he figured that it could be sold upon the basis of the value of 4½ cents per thousand cubic feet free of cost—in other words net cash, that he arrived at his figures by taking *the amount of gas that underlay these leases*, depleted that 45 per cent, and multiplied by 4½ cents, that he considers it worth the 4½ cents." (Davidson, R. 311.)

"That 4½ cents is what he considered the gas in the ground worth at the market price; that he never knew of any selling on that basis; that he considers it worth that." (Davidson, R. 312.)

"That in his opinion the gas is worth 4½ cents in the ground, and that in arriving at that he took into consideration the general trend of the market, having in mind the outside market, and speaking particularly of the market for the United Fuel Gas Company; that he believes that the United Fuel Gas Company could get that price for it over and above the cost to them—in other words, the cash basis for it to the *Hope, the Carnegie, or any of these companies.*" (Davidson, R. 314.)

It is manifest from the foregoing quotations that the value concerning which these witnesses spoke was a value induced by the demands and necessities of the public utility market. This is not inferentially, but expressly, shown by the statements of Gregory, (R. 300) and Davidson (R. 314), as well as by Corrin, (R. 288, 289). It is substantially borne out by Womack when he names the present price which is received for the gas and the demand in the various fields as the determinative value factors (R. 304), since the only current price and existing demand are those which result directly from the requirements of the natural gas utility business.

In the case of *Natural Gas Company of West Virginia v. Public Service Commission*, 95 W. Va. 557, 568, the State Supreme Court treated testimony similar to that presented here as follows:

"There are two objections to his testimony that we deem material. The first is that, while he may have been qualified as an expert witness, he does not sufficiently define the open market for these

leaseholds. The burden in this case is upon the company to establish its right to an increase. Section 9, ch. 15-0, Barnes' Code, 1923. The mere statement of the witness that the leaseholds are worth so much in the open market is not enough; he should have pointed out that market, defined it and explained its character. **Of course, if a natural gas public utility were the proposed purchaser, evidence of its offer would not be competent to show fair value in a rate case; and in like manner evidence of one whose valuation is based upon what he could obtain for the property when offered to a public utility would be incompetent; or if it is based upon the rate of return at the time of the offer or upon anticipated returns from the public it should be rejected.** Generally speaking, evidence of value in a rate-making case can not be based upon the rate of return or earnings of the utility, and whenever this appears, either directly or indirectly, such evidence is incompetent. It is almost inconceivable that there could be an open market for these gas leaseholds, situated as they are, which would not be based upon the rate at which the utilities there are selling gas to the public. While we held in *City of Charleston* v. *Public Service Commission*, 95 W. Va. 91, 120 S. E. 398, that in a rate case a utility is entitled to include in its present fair value, as a rate base, appreciation in the value of its leaseholds over investment cost, yet the evidence thereof must not be based upon, but must be independent of, the rates of return or earnings. Since the burden of showing the necessity or fairness of the proposed increase in rates is upon the company, a like burden is imposed upon it to show the value of its leaseholds

> over investment cost, as their value forms a component part of the rate base upon which the return is calculated. We hold, therefore, that a mere statement that they have a certain value in the open market is not sufficient; the party desiring to establish such value must by proper testimony show that it is independent of the rate of return or earnings of the company. Guided by this rule, the evidence in this respect is insufficient."

No doubt it was to meet just such criticism as the court there expressed that certain of the witnesses, despite the very obvious tenor of their whole testimony, attempted to say that in arriving at their estimates of value they had "in mind" an unregulated market, probably in Indiana, Ohio, the New York commercial market, or in the Pittsburgh industrial district. (R. 282, 288, 296.) Truly, these markets exist in the "mind." Of all the many conjectures upon which the different elements of plaintiff's case are founded none is more speculative than this undefined and unexplained market for plaintiff's gas supply, bounded on the east by some point in the state of New York, on the west by Indiana, and in all this wide domain theoretically free from embarrassing interference by the regulatory bodies of those states. All of these demands are to be supplied by the plaintiff, a corporation created and existing under the public utility laws of the State of West Virginia, which company has enjoyed the benefits of those laws since its organization. It involves the false theory of founding value upon earning, the "vicious circle" so frequently discredited by the courts.

The unreliability of these opinions as evidence of value appears forcibly from the testimony of Mr. Davidson. Mr. Davidson, before the Commission, testified that the gas holdings of the company were worth $39,000,000.00. (R. 309.) He was called as a witness for the plaintiff in

the hearing before the District Court. In the short time between these two hearings the Hope Natural Gas Company had entered the producing fields of the plaintiff. Davidson testified, because of this fact alone, his valuation before the Commission "should be reduced" twenty per cent." If the mere entry of one large competitor into the producing field of the plaintiff has such an effect upon the value of its acreage, it is interesting to consider what the effect would be if four or five of these large companies, who admittedly have an inadequate supply of gas, should enter the plaintiff's field. This goes to the question of whether plaintiff will be able to reduce to possession during the next eighteen years, the gas content assumed by Mr. Davis.

Plaintiff refers briefly to the testimony of Messrs. Cabot (R. 319), Sayre (R. 321), Ward (R. 323) and Grosscup (R. 323). These witnesses testified to contract prices ranging from 8 cents to 14 cents per thousand cubic feet for gas delivered to the purchaser either in the latter's pipe line or at the mouth of the well. Some of these contracts are the identical contracts referred to by Uebelacker in his valuation estimate (R. 198). The others are of the same character. All involve sales of small quantities of gas to purchasers conveniently located. It is reasonable to assume that they are the highest price contracts that could be found. Deducting the lifting costs, the average value of the gas in the ground based on the sales to which these witnesses refer could not be more than 5 cents, and as previously shown, in most instances would be about 3 cents per M cubic feet.

(G) PLAINTIFF'S EVIDENCE OF VALUE NOT UNCONTRADICTED

Plaintiff devotes a portion of its brief to the proposition that "there was an entire absence of any contradicting testimony" on the matter of the valuation of the gas rights.

This statement is not supported by the record. Mr. Hagenah's Exhibits Nos. 2, 3 and 4 (R. 1177-1216) deny the accuracy of the estimates of plaintiff's witnesses and their methods of valuation. Mr. Jirgal's testimony and exhibits, especially his exhibit No. 4, which shows the average cost of gas purchased, tend to refute Uebelacker's estimates of the value of the gas in the ground. The criticisms of both of these witnesses have been reflected in many parts of this brief.

Were plaintiff's proposition wholly true, however, it would not have the bearing which is attempted to be ascribed to it here. Opinions of witnesses as to such illusory matters are not analogous to testimony of observed facts which is usually accepted unless denied. Opinions on such questions need not be accepted by the Court. *The Conqueror*, 166 U. S. 110; *Wilcox v. Consolidated Gas Co.*, 212 U. S. 19.

> "Where factor in determination of whether electric rates amount to taking of company's property without just compensation involves prophecy, or rests on opinion evidence, neither commission or court is bound to accept absolutely either of conflicting views or opinion of single expert where but one testifies." (Decided April 28, 1927.)
>
> *Idaho Power Co. v. Thompson*, 19 Fed. (2d) 547.
>
> *Bluefield Tel. Co. v. P. S. Com.*, 102 W. Va. 296.

It is difficult to conceive a case where this principle has stronger application than to opinions as to the value of gas not yet discovered, and which if ever marketed must be sold over a long period of years.

Plaintiff in its brief here, as in the District Court, has charged the protestants with failure to produce practical

gas men to contradict the testimony of those examined by the plaintiff. The reason is obvious. All such experienced and practical sellers of gas are interested in securing the highest possible price for it; they are directly interested in securing an increase in rates for the plaintiff because this will result in an increase in the value of their product,—as was clearly brought out in the case of Mr. Davidson, who admitted that "there is a stipulation in his contract with the Columbia Gas & Electric Company that the price will be increased in the event of any increase allowed by the Public Service Commission for gas in the territory from which it is taken." (R. 317-8.) Hence no such witnesses were available to the protestants.

From a consideration of plaintiff's evidence we think that the following propositions relating to the valuation of plaintiff's gas rights are established:

1. That as the plaintiff has only a leasehold title or license as distinguished from a fee title or ownership, the leases must be valued as such and the amount of gas underneath such leases does not determine their value.

2. That gas being of a migratory and fugitive character, its presence underground cannot be considered in valuing leaseholds unless and until it is reduced to possession, or unless all uncertainties as to its being reduced to possession are removed.

3. That assumed markets for gas far distant from the location of plaintiff's property furnish no proper basis upon which to establish the fair values of leasehold rights.

4. That the price of a substitute product furnishes no basis upon which to establish the value of a property which has been dedicated to the public use.

5. That a public utility market for plaintiff's gas cannot be considered in determining the value of its gas

rights, for the reason that the public utility in that market has its rates regulated and the cost of the gas which it purchases from the plaintiff will control the rates which it is entitled to charge.

6. That in view of the nature of plaintiff's so-called leases, where the consumers pay the cost of carrying such leases as part of plaintiff's operating expense, they cannot be required to pay a return upon more than their actual cost.

7. That if plaintiff should be allowed to capitalize any increase in value of any part of its leases, the plaintiff and not the consumers must pay the carrying charges thereof.

(H) MEASURE OF APPRECIATED VALUE OF PLAINTIFF'S GAS RIGHTS

The Protestants contend that if this Court be of opinion that the Commission should have considered plaintiff's evidence of appreciation of its leasehold, and that such appreciated value should be reflected in the rate base, the amount thereof should be ascertained by the application of one or the other of the following methods:

(1.) Ascertain from the evidence the present day bonus cost of reproduction of the leases and add to such bonus cost of reproduction the present day carrying charges for the reasonable period found necessary to assemble all of these leases, and other expenses of assembling the leases. This method will give the best evidence of the cost of reproducing plaintiff's gas rights.

(2.) Sustitute in the operating expenses for the year 1923 the fair market price of the gas in the ground used in that year, and eliminate from such operating expenses any items which relate to the carrying costs of the acreage and from the rate base any items relating to its value.

STATEMENT SHOWING COST OF REPRODUCING ACREAGE
As of December 31, 1923

District	*County*	*Operated Acreage*	*Unoperated Acreage*	*Total Acreage*	*Bonus Cost of Reproduction Per Acre*	*Bonus Cost of Reproduction*
Union	Clay	1,838.12	14,643.26	16,481.38	$2.50	$ 41,203.45
Washington	Jackson	4,218.82	12,169.98	16,388.80	1.00	16,388.80
Cabin Creek	Kanawha	4,160.00	38,341.85	42,501.85	1.00	42,501.85
Big Sandy	Kanawha	10,420.43	36,354.89	46,775.32	4.50	210,488.94
Elk	Kanawha	4,896.50	21,253.14	26,149.64	1.75	45,761.87
Warfield	Mingo	1,459.00	7,591.87	9,050.87	1.00	9,050.87
Curtis	Roane	4,468.99	11,326.88	15,795.87	1.30	20,534.63
Geary	Roane	15,157.83	36,163.16	51,320.99	5.00	256,604.95
Smithfield	Roane	3,387.20	20,337.82	23,725.02	2.90	68,502.56
Spencer	Roane	3,556.76	11,160.84	14,717.60	1.00	14,717.60
Walton	Roane	7,590.57	15,568.95	23,159.52	5.00	115,797.60
Kentucky		4,315.50	105,470.75	109,786.25	.10	10,978.63
All others		3,431.00	405,142.97	408,573.97	.25	102,143.49
TOTAL		68,900.72	735,526.36	804,427.08	$1.18	$954,675.24

Assuming that it would take three years to acquire the total acreage owned by the company, there should be added—three times the delayed rental charges for 1923 (R. 1128) 1,885,570.47

—three times the leasehold expenses for 1923 (R. 1128) 146,570.47

Total cost of reproduction as of December 31, 1923 $2,986,351.56

(3.) If the Court considers that the fair market value of gas in the ground has been established, only the value of the gas in the *proven acreage* can be included in the rate base.

(4.) If the Court be of opinion to consider both "proven" and "probable" acreage, then it is necessary to ascertain what portion of this gas content valuation is presently used and useful.

(1)—COST OF REPRODUCING LEASEHOLDS:

Mr. Jirgal's testimony (R. 1088) shows the bonus cost of reproducing the acreage in the principal producing fields during the years 1921 to 1924, inclusive. By the application of these bonus costs to the total acreage leased by the company, a fair determination can be made of the cost of reproducing by the bonus payment plan the present acreage. As already indicated, in reproducing acreage considerable time would be required to assemble the various tracts and there would, therefore, necessarily be incurred considerable amounts for rentals and for leasehold expenses. This method of valuation affords evidence of the cost of reproducing that kind of property which the plaintiff actually owns, that is, leasehold rights to explore for gas. The cost of reproduction of the acreage on this basis would not be in excess of three million dollars ($3,000,000). This is shown by the following table based on "Jirgal Ex. No. 3".

Insert—Statement Showing Cost of Reproducing acreage

The value of the leaseholds, obtained by this method, is lower than the book cost for the reason that in placing the original valuation on these leases, the plaintiff disregarded the then costs of reproducing the leases or any cost of renewing the leases at that particular time.

(24)—GAS PURCHASED THEORY OF JUDGE ROSE

As this method has already been discussed under the same title, and as it has been developed in the opinion of Judge Rose (R. 1264), we do not think it necessary to do more at this point than to refer the court to these references. However, we wish to direct attention to Mr. Hagenah's Exhibits, Nos. 6, 6A, 7 and 7A (R. 1222-24), which show the results when this method is applied in the instant case. (See Insert.)

Class of Business	Cost of Reproduction Less Depreciation at Dec. 31, 1923**	Net Earnings Available for Depreciation and Return	Depreciation 5.5 Per cent of Book Cost of Property	Net Earnings Available For Return	Per Cent on Cost of Reproduction Less Depreciation
West Virginia:					
Charleston	$ 3,396,543	$ 651,356	$ 132,957*	$ 518,399	15.26
Huntington	2,556,555	275,830	101,034*	174,796	6.84***
Williamson	349,858	44,434	13,822*	30,612	8.75
Other West Virginia Towns	1,831,021	314,116	71,525*	242,591	13.25
TOTAL WEST VIRGINIA	$ 8,133,968	$1,285,736	$ 319,338*	$ 966,398	11.88
Kentucky	2,716,778	666,572	106,786*	559,786	20.60
Ohio	1,616,574	344,756	63,799*	280,957	17.38
Wholesale Service	15,491,850	3,120,116	607,084*	2,513,032	16.22
TOTAL GAS DEPARTMENT	$27,959,180	$5,417,180	$1,097,007	$4,320,173	15.45

*Red

**Covers Mr. Hagenah's value of physical property, going concern value and working capital, in fact all elements of value except leaseholds.

***Comparatively low return at Huntington is due to competition at Huntington hereinafter explained.

(3)—ONLY "PROVEN" ACREAGE TO BE CONSIDERED.

We submit that there can be no just claim by the plaintiff that it has been unfairly dealt with if the future supply of gas estimated to be in the "proven" territory is valued at the alleged 1923 fair market value in the ground of all such gas.

As stated, the Income Tax Department of the government has confined its determinations of discovery value in the case of natural gas deposits to "proven" territory defined in such way as practically to include what Mr. Davis has classed as proven territory for the purposes of this case. The District Court found that this proven territory was sufficient at the present rate of consumption to take care of plaintiff's entire business for five years in the future and to provide for its retail business in the state of West Virginia for over 20 years.

The record shows that the company purchased in 1923 over 9 billion cubic feet of gas from outside parties and that it drew from its own territory only 37 billion cubic feet. If this rate of purchase from outside parties is maintained at the rate obtaining for 1923, the gas supply in the proven territory would last nearly 7 years. All of the uncertainties as to whether this gas can be reduced to possession are of course not removed and the plaintiff is, therefore, being fairly dealt with if the Court should apply to the content in the proven acreage the fair market value of gas in the ground. Protestants claim that this fair market value is shown to be about 3 cents per thousand cubic feet, while plaintiff urges a value of 5 cents per thousand cubic feet. On these two bases the valuation of the gas in the proven territory would be as follows:

At 5 cents per thousand cubic feet (plaintiff	$12,455,000.00)
At 3 cents per thousand cubic feet (protestants	7,473,000.00)

Protestants contend that this method is far too favorable to the plaintiff because it does not consider the fact that the gas has not actually been reduced to possession. The consumer, therefore, will still speculate on the possibility as to whether the plaintiff will actually be able to raise the gas to the surface of the well.

(4)—PART OF PLAINTIFF'S GAS RESERVE PRESENTLY USED AND USEFUL

The solution of the valuation question outlined in the foregoing paragraph has added significance when it is considered in connection with Mr. Hagenah's estimate of the portion of plaintiff's gas rights presently used and useful in the utility business. His Exhibit No. 5 (R. 1555) is a masterly application of that principle to plaintiff's gas rights. As an engineer it is his belief that "the public interest will be adequately protected by a reserve sufficient to meet all reasonable requirements for 5 years in the future, and only such portion of the reserve should be included in the rate base at its fair present value." We ask the court's consideration of his diagram picturing the relation of this five-year supply to the entire reserve found at p. 1256 of the Record and explained at p. 1257.

At the present rate of production this method of valuation would closely approximate the value of the gas content of the proven territory as estimated by Mr. Davis, $10,317,311.39. For that reason, seemingly, it was this valuation of the proven territory which received the apparent approval of Judge Rose:

> "For the reasons already stated, we cannot see how any other portion of its gas can be held to be used in the public service, no matter how elastic a definition be given to the word 'used'. At the risk of tiresome repetition, we can say that we do not criticize plaintiff for acquiring any or all its gas

rights. It was doubtless wise to get them. All that we decide is that in arriving at the rate base upon which plaintiff is entitled to a fair return, we may not combine two opposing theories. We are not justified in saying that because plaintiff's investments in gas reserves were prudent, those reserves immediately went into use and that therefore plaintiff is entitled to have them appraised at the many times higher value it says they now have. If in dealing with its tangible property and going concern value, we are required to ignore, except for check purposes, plaintiff's investment in them, we must apply the same rule to its gas reserves.

If we are right, $10,812,311.39 is the highest valuation which can be put upon such portion of plaintiff's reserves as it has any claim to include in its rate base."

Plaintiff emphasizes the vision and foresight of its officers in assembling its large lease holdings, and the consequent advantage to the public. Protestants submit that there is little advantage to the public if it is to pay a return on the entire gas reserve of the plaintiff, part of which may not be used for many years. Mr. Hagenah forcibly pointed this out as follows:

"Where does the public gain in the slightest degree by the company going out and buying this gas land in the future if it must always pay for it on the basis of its gained value as determined by competitive conditions by the exchange method. The public would gain by the fact that it had the gas, but it would pay a price for it purely determined by the monopoly power."

(R. 446.)

Plaintiff argues (Plaintiff's Brief, p. 54, 64) that if only the presently used and useful portion of the gas reserves be included in the rate base that an annual amortization rate sufficient to amortize *all of its property* (including physical property) in five years must be allowed. This argument indicates a misapprehension of the District Court's position (R. 1264) and that of protestants as presented by Hagenah. Mr. Hagenah (R. 444, 1216-1221) accepted for the purpose of his analysis the eighteen-year estimated life of the field as determined by Davis, but was of opinion that *only a five-year supply* of this total eighteen-year gas content was presently used and useful. He contemplated the depreciation and amortization of the property on the basis of at least eighteen years, and that the total appraised value of the gas reserves, (assuming the "market value" to be the proper basis), would ultimately be absorbed in the cost of gas by each year adding to the used and useful reserve an appropriate amount to offset the reduction of such supply for the year just closed. On this basis, the five-year supply was moved forward and kept undiminished each year until the entire supply had been consumed. This does not mean that the physical property used in transporting and distributing the gas over the eighteen-year period is to be depreciated and amortized on a five-year life basis. The plaintiff would find little incentive to dispose of its leases acquired at probably one-half of their present reported "book cost" and abandon a very valuable physical plant, at the end of five years, when it can always secure a fair return on five-eighteenths of the "present value" of such leases.

Commissioner Divine fixed $10,500,000, approximately the same amount as was found by Judge Rose, for the value of the leases upon consideration of all of the evidences of value in the case. (R. 136.)

On the basis of Mr. Hagenah's calculations, the value of the gas reserves (based on $33,000,000 valuation of

Mr. Uebelacker) by the two methods explained by him are as follows:

Using 5/18 of the appraised value and 13/18 of the book cost	$14,005,554
Using only 5/18 of the appraised value	9,160,667

This limiting of capitalizing appreciation of gas reserves to only such part thereof as is presently used and useful is sustained by the City of Erie case, cited and relied on by plaintiff, where the Supreme Court of Pennsylvania held:

> "Gas holdings should be included and valued for rate-fixing purposes only to the extent that they represent **developed, used, and useful territory**, including a reasonable reserve for the continued functioning of the company in the public service."
>
> *City of Erie v. P. S. C.*, 228 Pa. 512, 132 Atl. 471, 478 (Syl. 11).
>
> *Re Plainfield Union Water Co.* (N. J.) P. U. R. 1924 D 300.

I—BOOK COST OF PLAINTIFF'S ACREAGE

In other parts of this brief we have shown that "book cost" as herein used is not book cost, but the inflated valuation of the leases carried upon plaintiff's books. This value on December 31, 1923, was $6,343,329.67 (R. 117). Jirgal's Exhibit No. 3, page 11, shows that the leasehold expenses and carrying charges in the form of rentals on unoperated acreage have aggregated $7,126,454.00 since 1908 (R. 1091). These large amounts have been included in the expenses on which the existing schedule of rates is founded. To include in operating expense the rentals on the unoperated acreage and the leasehold expenses was shown by Mr. Jirgal to be equivalent to allowing on an 8 per cent capitalization basis an added value to the company of $7,360,000.00. Thus, when the Commission accepts

the "book cost" of the gas reserves as the best evidence of their present value and makes no adjustment in the operating expenses to cover all carrying charges, the company is in fact benefited by the equivalent of applying the rate of return to the sum of these two items, or $13,703,329.67, as follows:

Book value of acreage December 31, 1923	$6,343,329.67
Carrying charges and expenses of $589,186.00 for 1923 capitalized on an 8 per cent basis	7,360,000.00
	$13,703,329.67

Summary

The following is a summary of the methods of valuation discussed above in sections H and I:

Book Cost of Acreage (R. 1071 and 1154)	$ 6,732,920
Book Cost after Excluding oil Acreage (R. 1072, R. 117)	6,343,329
Cost of Reproducing Leases on Basis of Prevailing Bonus Payments and Lease Rentals, etc. in 1923 about	3,000,000
Value of gas in Proven Territory at 5c per M cubic feet in the ground	12,455,000
Value of gas in Proven Territory at 3c per M cubic feet in the ground	7,473,000
Value of 5/18 of Total at appreciated Value of $33,000,000 and 13/18 at book cost as representing presently used and useful property	14,005,554
Value of only 5/18 of Total at appreciated Value of $33,000,000 as representing presently used and useful property	9,166,667
Appreciated Book Cost of leases on same basis as increase in prices of other commodities (Hagenah, R. 485)	9,495,920

13.18 at Book Cost as representing Presently Used and Useful Property	24,000,000	960,000	3,000,000	14,005,554	41,995,554
Value at only 5/18 of Total at Appreciated Value of $33,000,000 as representing Presently Used and Useful Property	24,000,000	960,000	3,000,000	9,166,667	37,156,667
Appreciated Book Cost of Lease on Same Basis as Increase in Prices of Other Commodities (Hagenah, R. 485)	24,000,000	960,000	3,000,000	9,405,920	37,405,920

*This basis gives no weight to original cost of physical property which as shown is entitled to considerable weight because such a large part of the property was built during the period of high prices. Original cost to December 31, 1923, was $19,945,582. Using original cost as a basis would give a fair valuation of about $4,000,000 less in each of the above cases.

SUMMARY OF VALUATION OF PLAINTIFF'S PROPERTY INCLUDING DIFFERENT VALUATIONS OF LEASES AS SHOWN BY PROTESTANT'S WITNESSES

Basis Assumed for Valuing Gas rights	Maximum Fair Value of Physical Property (Hagenah R 486)*	Required Working Capital Agreed on by Parties	Going Concern Value—Not Disputed in Bill of Complaint	Value of Leaseholds on Various on Various Bases Discussed Above	Total Fair Value of Plaintiff's Property on each of Foregoing Bases
Book Cost of Acreage (R 1071 and 1154)	$24,000,000	$ 990,000	$3,000,000	$ 6,732,920	$34,722,920
Book Cost after Excluding Oil Acreage (R 1071)	24,000,000	990,000	3,000,000	6,343,329	34,333,329
Cost of Reproducing Leases on Basis of Prevailing Bonus Payments and Lease Rentals, etc. in 1923 about	24,000,000	990,000	3,000,000	3,000,000	30,990,000
Value Gas in Proven Territory at 5c per M Cubic Feet in the Ground	24,000,000	990,000	3,000,000	12,455,000	40,445,000
Value Gas in Proven Territory at 3c per M Cubic Feet in the Ground	24,000,000	990,000	3,000,000	7,473,000	35,463,000
Value 5/8ths of Total at Appreciated Value of $ [illegible] and					

Protestants contend that the Commission was entirely right in finding that the book cost was the only reliable evidence of the value of the gas rights, but that even if this be not true, a finding of value, taking into consideration the appreciation element, of more than $10,500,000 would not be warranted on the basis of plaintiff's evidence. This is in substance the finding of the District Court.

VIII.—NO CONFISCATION UNDER ANY VIEW OF THE EVIDENCE

At the outset of this brief, protestants undertook to show that no confiscation could exist in the present case if the fair value of the property was found to be no higher than the valuation which would be arrived at by capitalizing the net earnings under existing rates at a reasonable rate of return. We think it has appeared from the evidence that the fair value cannot possibly exceed the valuation arrived at on these capitalization bases and that no higher fair value can be found for plaintiff's property than the amounts already found by the Public Service Commission. Certainly, the fair value cannot exceed the amount set forth in the opinion of the District Court.

That the latter contention is sound will appear, we think, from the following table in summary of the valuation problem

We again compare the value of plaintiff's property arrived at by the capitalization method with the fair value arrived at by the Commission and the Courts

	Value arrived at by Capitalizing on Percentages found reasonable for Return, or for Return Amortization and Depreciation	*Determined Fair Value*
1 By Chairman Stathers Public Service Commission of West Virginia	$67,000,000.00*	$35,999,969.14
2 By Commissioner Divine District Court for Southern District of West Virginia	65,000,000.00*	40,165,000.00
3 On basis of Adjusting Parent Company rates to comparable wholesale rates	58,858,872.27**	40,307,311.39
4 On Basis of Adjusting Parent Company rates to rates comparable with those applying to West Virginia retail consumers	53,295,228.84**	40,307,311.39
5 Same as 3 except delay rentals are deducted from operating expenses	63,900,000.00***	40,307,311.39
6 Same as 4 except delay rentals are deducted fro operating expenses	58,300,000.00***	40,308,311.39

*Arrived at by capitalizing net earnings at 8%

**See Judge Rose's Opinion (R. 1239)

***Approximately $5,000,000 added—See Judge Rose's Opinion (R. 1271 and 1272)

The facts appearing from this table demonstrate, we think, there is no confiscation of plaintiff's property under its existing rates

IX—COMMISSION'S JURISDICTION OF PLAINTIFF'S WHOLESALE BUSINESS

Protestants deny plaintiff's argument that the Commission has no jurisdiction to regulate the rates which plaintiff charges the public utilities purchasing from it

> *Clarksburg L. & H. Co. v. Pub. Ser. Com.*, 84 W. Va. 638

We submit, however, that this court is not concerned with that question. The plaintiff is not the proper person to complain of discrimination between its different consumers. If its business yields a fair return there can be no confiscation.

> "Where none of the different classes of consumers complain of different rates the corporation can not complain of such differences provided the total receipts are sufficient to yield an adequate return."
> *Willcox v. Consolidated Gas Co.*, 212 U. S. 19
> *Pittsburgh & W. Va. Gas Co. v. P. S. C.*, 101 W. Va. 63

X—RETURN FROM WEST VIRGINIA RETAIL BUSINESS

It is not difficult to determine from the evidence the operating results from West Virginia retail business. The bases of apportioning the property values and the operating revenues and expenses have been laid down by the Commission for a great many years and have been uniformly applied in the cases which the plaintiff has brought before the Public Service Commission. In general, these bases or principles are as follows:

> 1. That the revenues of the company shall be assigned directly to each class of business. This can be accurately done from the company's records.

2. That all items of expense and property value which relate to the production system shall be divided between each class of business on the basis of the number of cubic feet of gas sold to such class of business.

3. That all items of expense and property value which relate to the transmission system shall be assigned to the various classes of business on the basis of the demand-mileage. In other words, this basis is the composite arrived at by multiplying the contribution made to the system maximum demand in the case of each class of service by its distance from the center of the field. The transmission investment is of course determined by two factors, to-wit, volume of gas which flows through the pipes at the time of the maximum demand on the system and the number of miles of pipe which it is necessary to lay in order to reach the point of delivery for each class of business.

4. All items relating to the value of the distribution plant and the expense of its operating shall be directly assigned to the class of business served by such distribution systems. This can be done directly in the case of the several valuations and in the case of the company's records. The wholesale business is not burdened in any way with the value of the distribution system nor its operating expenses.

5. The small amount of general property and general operating expenses which are incidental to the business are distributed on the so-called overhead basis, that is, in proportion to the results arrived at by a combination of the allocation bases referred to above.

We understand that counsel for the plaintiff approve these bases of apportionment. They were approved by the District Court (R. 1270).

The table on ~~the opposite~~ page shows that the net earnings (after deducting for depreciation and amortization) applicable to the State of West Virginia, were $1,333,329. (Jirgal "Exhibit 3 J. C. No 1"—R. 1161.) Except for a minor adjustment of $11,780, representing border line sales, Judge Rose accepted these net earnings down to the point of the deductions for depreciation and amortization. (R. 1271.) The adjustment for parent company sales has no influence on the results for West Virginia retail business and Jirgal made no such adjustment in arriving at net earnings from that business.

The figure of $881,989 represents that portion of the whole sum of $1,399,227, allocable to the West Virginia retail business for depreciation and amortization. (Jirgal "Ex. 3 J. C. No 1", 1161.) While the sum of $1,399,227 is arrived at by applying the Commission's allowance to the original investment, (which we insist is the correct method), we think it has been sufficiently demonstrated that it is ample though this court should reject protestants' view that amortization is to preserve the company's investment intact and should apply the percentage allowance to present value. (Ante, p. 54.)

If to the earnings of $1,333,329 the delay rentals ($147,945) be added back and the total be capitalized at 8 per cent, the valuation, for the West Virginia retail business is $16,700,000.

We submit that no confiscation exists if the fair value arrived at by the Commission or the District Court assignable to the West Virginia business is not more than $16,700,000, regardless of such errors, if any, as may have entered into their findings as to the rate base.

The District Court found the fair value, even considering the appreciation in the leaseholds assignable to West Virginia to be only $11,251,399. (R. 1273.) This figure includes the full appreciated value of all of the leases assignable to West Virginia business which can be proper-

ly considered as used in the public service (R. 1264). It is in line with Commissioner Divine's figure of $10,500,000 as the total value of the leases. The fair value of plaintiff's property arrived at by capitalizing its earnings assignable to West Virginia retail business is therefore far greater than the fair value assigned by the District Court. It is nearly $2,000,000 greater than the amount assumed as the value of the plaintiff's property "used and useful" in West Virginia ($14,940,980) at page 62 of appellant's brief which includes the appreciated value of its leaseholds as alleged in its bill.

The evidence on the net earnings assignable to the West Virginia retail business is summarized in the following statement:

	Judge Rose R. 1271	*Mr. Jirgal Per Exhibit 3 J. C. No. 1 R. 1161*	*Difference*
Gross Earnings	$2,307,051	$2,318,831	$ 11,780
Proportion of Gasoline Extraction Credit	234,626	234,626	-------
Total Gross Income	$2,541,677	$2,553,457	$ 11,780
Operating Expenses and Taxes	986,084	986,084	-------
Net Earnings before Depreciation and Amortization but after Deducting Delay Rentals	$1,555,593	$1,567,373	$ 11,780
Deduct—Depreciation and Amortization Computed on Original Cost		381,989	
Net Earnings before Adding back Delay Rentals and Leasehold Expense		$1,185,384	
Add Back—Delay Rentals and Leasehold Expense		147,945	
Net Earnings available for Return		$1,333,329	

In lieu of Jirgal's allowance of $381,989 for amortization and depreciation, Judge Rose deducted from his net earnings of $1,555,593 the item of depreciation assignable to West Virginia amounting to $113,658 and arrived at $1,441,935 as the earnings applicable to return and amortization. Using a capitalization factor of 11.65 per cent to cover these two elements he arrives at an effective fair value of $12,377,124 (R. 1272), an amount more than $1,000,000 in excess of the value found by him. He questions the allowance of delay rentals amounting to $147,945 as an operating charge, and shows that if they were added back to the net earnings, as protestants claim they should be, they would add an additional $1,000,000 to this effective fair value. Without discussing the question, Judge Rose by using a composite percentage for fair return and amortization, in effect adopted fair value as the correct basis for computing the annual allowance to cover amortization. Protestants contend that the original investment is the proper basis and that the proper net earnings to capitalize at 8%, are shown to be $1,333,329.

In order that the Court may have before it evidence of value for West Virginia similar to that which it has for the property as a whole, there is reproduced below the allocation of the physical property, working capital, and going concern value for each of the witnesses testifying in this case. For the purpose of this statement going concern value has been taken at $3,000,000 as the evidence shows that no higher amount is justified.

(See insert. Statement showing Allocation to West Virginia of Physical Property Values, Working Capital and Going Concern Value.)

On the basis of this statement it would appear that no higher value than that shown by Hagenah, $8,134,874, should be allowed as the proportion of the three items of physical property, working capital, and going concern

STATEMENT SHOWING ALLOCATIONS TO WEST VIRGINIA OF PHYSICAL PROPERTY VALUES, WORKING

Particulars	Basis of Apportionment	Cost of Reproduction New Less Depreciation		Historical Cost As	Original Cost As
		As Found By Mr Ubelacker	As Found By Mr. Hagenah	Found By Mr Ubelacker	Found By Mr. Jirgal
Production system (Exclusive of leaseholds	Sales (25.11%)	$1,966,213	$1,855,602	$2,224,233	$2,113,107
Transmission system	System demand mileage (20.72%)	2,311,176	2,012,616	1,914,131	1,931,377
Distribution system	100% of property actually located in West Virginia	1,915,322	1,878,260	1,587,456	1,506,236
General property	Overhead on property	169,858	167,797	89,938	34,044
Total specific cost		$6,362,569	$5,914,275	$5,815,758	$5,584,764
General overhead charges	Overhead on property	1,815,572	1,064,573	1,253,600	
Total reproduction cost less depreciation (Exclusive of leaseholds)		$8,178,141	$6,978,848	$7,069,358	$5,584,764
Working capital	Overhead on expenses	282,546	282,546	282,546	282,546
Going concern value	Overhead on property	856,800	873,480	845,250	840,000
Total above items		$9,317,487	$8,134,874	$8,197,154	$6,707,310
Per cent allocated to West Virginia		28.56%	29.10%	28.19%	28.02%

devoted to the West Virginia retail business. By rounding out, in the interest of easy computation, Hagenah's estimate for the reproduction cost less depreciation at $24,000,000, the amount for West Virginia, for the particular three items mentioned, becomes $8,143,866, as will presently appear.

The protestants in this case claim that the maximum fair value of the physical property is only $24,000,000. Chairman Stathers set the value of the physical property at $25,000,000, and the District Court held that such fair value was not in excess of $26,000,000. In order that the Court may have before it the total amount assignable to West Virginia in the case of the three items of physical property, working capital, and going concern value, there is given below such total on each of these bases.

STATEMENT SHOWING ALLOCATION TO WEST VIRGINIA OF PHYSICAL PROPERTY VALUES, WORKING CAPITAL AND GOING CONCERN VALUE, WHEN PHYSICAL PROPERTY IS VALUED AT $24,000,000, $25,000,000 AND $26,000,000

Particulars	*Physical Property*	*Working Capital*	*Going Concern Values*	*Total*
On basis of $24,000,000 physical property	$6,987,840	$282,546	$873,480	$8,143,866
On basis of $25,000,000 physical property	7,279,000	282,546	873,480	8,435,026
On basis of $26,000,000 physical property	7,570,160	282,546	873,480	8,726,186

STATEMENT SHOWING TOTAL VALUE ASSIGNABLE TO WE
SEVERAL BASES HERETOFORE DISCUSSED.

Basis Assumed for Valuing Gas Rights	*Maximum Fair Value of Physical Property (Hagenah, R. 486)*	*Requi Work Capi Agre on b Part*
Book cost of acreage, R. 1071 and 1154	$6,987,840	$282,5
Book cost after excluding oil acreage, R. 1071	6,987,840	282,5
Cost of reproducing leases on basis of prevailing bonus payments and lease rentals, etc. in 1923—about	6,987,840	282,5
Value of gas in proven territory at 5c per M cubic feet in the ground	6,987,840	282,5
Value of gas in proven territory at 3c per M cubic feet in the ground	6,987,840	282,5
Value at 5/18 of total at appreciated value of $33,000,000 and 13/18 at book cost as representing presently used and useful property	6,987,840	282,5
Value at only 5/18 of total at appreciated value of $33,000,000 as representing presently used and useful property	6,987,840	282,5
Appreciated book cost of leases on same basis as increase in prices of other commodities (Hagenah, R. 485)	6,987,840	282,5

VIRGINIA WHEN LEASEHOLDS ARE VALUED ON EACH OF THE

	Going Concern Value—Not Disputed in Bill of Complaint	*Total Foregoing*	*Value of Leaseholds on Various Bases Discussed Herein*	*Total Fair Value of Plaintiff's Property on Each of Foregoing Bases*
6	$873,480	$8,143,866	$1,690,636	$ 9,834,502
6	873,480	8,143,866	1,592,810	9,736,676
5	873,480	8,143,866	753,300	8,897,166
5	873,480	8,143,866	3,127,451	11,271,317
5	873,480	8,143,866	1,876,470	10,020,336
5	873,480	8,143,866	3,516,795	11,660,661
5	873,480	8,143,866	2,301,750	10,445,616
4	873,480	8,143,866	2,384,426	10,528,292

If the various estimates of leasehold values heretofore discussed are allocated to West Virginia on a sales basis —which is conceded to be proper by all parties—the following results obtain.

STATEMENT OF ALLOCATIONS TO WEST VIRGINIA OF VALUE OF LEASEHOLDS ARRIVED AT ON VARIOUS BASES. *(Sales basis of allocation used, 25.11%.)*

Particulars	*Amount*
Book cost of acreage, R. 1071 and 1154	$1,690,636
Book cost after excluding oil acreage, R. 1071	1,592,810
Cost of reproducing leases on basis of prevailing payments and lease rentals, etc. in 1923 about	753,300
Value of gas in proven territory at 5c per M cubic feet in the ground	3,127,451
Value of gas in proven territory at 3c per M cubic feet in the ground	1,876,470
Value of 5.18 of total at appreciated value of $33,000,000 and 13.18 at book cost as representing presently used and useful property	3,516,795
Value only of 5.18 of total at appreciated value of $33,000,000 as representing presently used and useful property	2,301,750
Appreciated book cost of leases on same basis as increase in prices of other commodities (Hagenah, R. 485)	2,384,426

Accepting a maximum fair value of $24,000,000 for physical property, $900,000 for working capital, and $3,000,000 for going concern value, it is now possible to determine the total fair value for that portion of applicant's property which is devoted to the retail business in West Virginia. This is done for each method of estimating leasehold values in the following statement.

INSERT. Statement showing total value assignable to West Virginia when leaseholds are valued on each of the several bases heretofore discussed.

It will be noted that even on a most favorable basis of valuing gas leaseholds a total value of only $11,000,661 is assignable to West Virginia. It has already been shown that if the earnings applicable to West Virginia retail business are capitalized on the basis of a reasonable return of 8%, the effective fair value for West Virginia retail business would be $16,700,000. This amount is fully $5,000,000 in excess of any fair value which could be arrived at by considering the separate elements.

Plaintiff in its brief has prepared tables to show its view of the earnings necessary for the West Virginia business (p. 62) and of the rate base allocable to that business (p. 64). Both studies are premised upon the inclusion in the rate base of a leasehold valuation of $30,000,000, and for that reason are challenged by protestants. Aside from this fundamental objection, there are certain errors which are apparent even upon plaintiff's view of the case.

Plaintiff states (p. 62) that Uebelacker found the gross earnings for 1923 to be $2,155,475. This is true. Mr. Uebelacker included only the revenue from the *cities* of West Virginia (Hightower "Exhibit No. 5", R. 9961). Had he included rural and field sales, his total would have been $2,318,831 (Jirgal, R. 10671). In the same table plaintiff further errs in making a double deduction for depreciation to its own advantage. In arriving at the figure of $1,441,935, Judge Rose had deducted $113,658 for depreciation, yet in computing its figure of $1,804,175 plaintiff includes $72,548 for depreciation. Even accepting plaintiff's theory of the case, its figure of $1,804,175 is not properly comparable to Judge Rose's $1,441,935.

A significant result obtains if there be added to Judge Rose's figure of $1,441,935 the delay rentals of $147,945, and the whole ($1,589,880) be capitalized at 11.65 per cent, the percentage allowed by the District Court for return and amortization. An effective fair value of $13,547,034 for West Virginia retail business is indicated. Deduct-

ing $8,143,866 for physical property, going value and working capital (Ante, p. 180) there remains $5,503,168 for gas rights allocable to West Virginia business. Using Mr. Uebelacker's apportionment of 25 per cent (Plaintiff's brief, p. 62) of the property value for West Virginia, there results as a total valuation for plaintiff's leaseholds the sum of $23,455,548. This valuation includes but two adjustments, one for gasoline earnings, the other, the crediting of delay rental charges to earnings. Neither parent company sales nor depreciation on the basis of original cost enters into this amount. It is more than twice the value arrived at by Commissioner Divine and the District Court and nearly four times the book cost. Stating this in another way, the total property valuation on this basis would have been as follows:

Physical property	$24,000,000
Working capital	990,000
Going concern value	3,000,000
Leaseholds	22,012,772
	$50,002,772

Protestants, of course, reject any such valuation as $50,000,000 as grossly excessive. The present earnings of the plaintiff, however, with but two adjustments, gasoline earnings and the charging back of delay rentals, sustain that valuation.

The table at page 65 of plaintiff's brief condemns itself. It purports to demonstrate that the retail earnings in West Virginia are inadequate, though only a five years' supply of gas is included in the rate base. The methods used are founded upon plaintiff's misconception of the "used and useful" theory of valuing the gas acreage. To amortize $9,793,486 worth of property at the rate of 18.46 per cent per annum, as provided by plaintiff's figures, means the amortization of all of its capital, including

physical plant within five years. No such conclusion follows from the inclusion of merely the "used and useful" portion of the gas reserves in the rate base. (See discussion, ante, p. 167-168.) A revision of plaintiff's table more nearly representing its theory of the case follows:

Depreciation, 1.12% of $6,477,476 (Physical property)	$ 72,548
Return, 8% of $10,039,996	803,200
Amortization of *present value* of leases, 18.46% of $2,569,010	474,239
Amortization of *present value of physical* plant 3.65% of $6,477,476	236,427
Total minimum sum which appellant must earn for depreciation, amortization and return	$1,586,414

The necessary earnings thus arrived at are approximately the same as those which the District Court found the plaintiff was actually receiving, even before adding back delay rentals.

Still further revising the above table so as to amortize the *investment* in the leases and physical property assignable to West Virginia, the result is as follows:

Depreciation 1.12% of $6,477,476	$ 72,548.00
Return, 8% of $10,039,996	803,200.00
Amortization of 5/18 of book cost of leases (18.46% of $469,621)	86,692.00
Amortization of book cost of physical plant (3.65% of book cost plus 1924 additions)	186,649.00
Total minimum sum which appellant must earn for depreciation, amortization and return	**$1,149,089.00**

The plaintiff in this case leaves the inference with the Court that the retail rates in the State of West Virginia are out of line with its wholesale rates. Nothing is further from the fact. The reason the plaintiff has come to this erroneous conclusion is that it has compared the average rate per thousand cubic feet received in West Virginia with the average rate received from its wholesale business (exclusive of the rates to its parent companies). The reason it is not proper to use the average retail rate received for gas in the State of West Virginia in making this comparison is because many of the communities served by the plaintiff are located close to the production field and therefore the cost of supplying them is very much less than the cost of supplying the majority of the wholesale users, the points of delivery to which are farther removed from the center of the field. A large proportion of the total retail sales in West Virginia are made in the field or so close to the fields as to involve practically no transportation costs.

The true test to be used in determining whether West Virginia retail consumers contribute to the aggregate profits of the company their just share is to be found in the percentage which is earned on the investment properly allocable to that state as compared with the percentage earned for the property as a whole. The application of this test can easily be made. For this purpose, it is best to use Mr. Jirgal's exhibits although they relate only to the book cost. The reason this can be done is because the appreciation in property values is distributed equally and proportionately throughout the property, whether it is located in West Virginia or elsewhere. In view of the fact that we are interested only in relative profitableness of various sections of plaintiff's business, it is therefore possible to use book cost as well as any other basis of valuation in the demonstration.

Jirgal shows at R. 1067 that the plaintiff earned on its wholesale business only 11.93 per cent for depreciation,

amortization and return on investment in the year 192
This is considerably lower than the percentage earned fo
return, depreciation and amortization in the West Virgini
retail business which was shown to be 18.93 per cen
However, it has already been shown that the two parer
companies of the plaintiff do not pay a proper price fo
their gas supply and if the adjustment is made along th
lines contended for by the protestants, the wholesale bus
ness including the revenue resulting from the adjustmer
would yield for return, depreciation and amortizatio
21.32 per cent as shown by Jirgal's calculations

On the basis of the company's own records therefore, th
wholesale business contributes much less to the total busi
ness of the company than does the West Virginia retai
business. Using plaintiff's line of reasoning it woul
appear that it was seeking to make up in West Virgini
retail rates its failure to require the wholesale business t
pay its way. In other words if the parent companies pai
their share of the total necessary earnings there would b
no need to increase the rates to West Virginia retail con
sumers. But even if an adjustment for the parent compan
sales is made, there is only a slight differential in favo
of the wholesale business as against the West Virgini
retail business. This small differential is explained not b
the unreasonableness of any rates applied to the retai
business in West Virginia but is due to the fact that i
the largest community served by the palintiff in this state
it is required to compete with another natural gas distrib
uting company, The Huntington Development & Gas Com
pany (R. 353). This competition at Huntington has bee
repeatedly referred to by the commission in its decisions
and is discussed in plaintiff's first application for an in
crease, *In Re United Fuel Gas Co.* 1 P. S. C. of W. Va
Dec. 238 (1916) also in its case No. 585, 1 P. S. C. o
W. Va., Dec. 501. Jirgal shows in his Exhibit No. 1
(Record, page 1068) that the plaintiff earns in the city o

Huntington only about two-thirds of what it earns in the balance of the state. The effect of this competition is very clearly shown by the fact that the average rate for the city of Huntington is about the same as it is for the city of Charleston, although Huntington is located more than 40 miles farther from the center of the field than is Charleston. Over one-third of the plaintiff's investment assignable to the State of West Virginia is attributable to Huntington business so that the effect of this competitive situation on the total West Virginia business must necessarily be marked.

Bearing in mind that after adjusting the sales to the parent company the plaintiff earns from its wholesale business 21.32 per cent for return, depreciation and amortization, we find that there is practically no difference between the profitableness of West Virginia retail business which is regulated and the wholesale business of the plaintiff which up to this time has been a matter of free contract.

XI.—CONCLUSION.

To summarize the points discussed in this brief, we submit

1. That in passing upon the issue of confiscation in this case the Court is primarily concerned not with the fair value specifically found by the Commission and the Court, but with that valuation which results from capitalizing plaintiff's net earnings on the basis of a reasonable return. Such capitalization results in a valuation far in excess of the specific findings of fair value of the Commission and the Court.

2. That the Commission did not err in finding too low a fair value for plaintiff's property and that such finding is fully supported by the evidence in this case. Further, this finding by the Commission is so much less than the effective fair value resulting from capitalizing the existing rates that no ground for confiscation is shown.

3. That in ascertaining the net earnings of the plaintiff for the purpose of applying the capitalization basis, the Commission was clearly right in making adjustments for the gasoline extraction privilege, and for the sales of gas to the parent companies, but it erred in allowing too large an amount for depreciation and amortization, and if appreciation of leaseholds over investment cost is to be considered, it should have excluded from the operating expenses the amount of delay rentals and leasehold expenses.

4. That upon all the evidence, there is no showing of confiscation upon a consideration either of plaintiff's business as a whole or of only its retail business in the State of West Virginia.

The fact that plaintiff's earnings when capitalized at 8% produce a fair value far in excess of that found by the Commission or the Court, approximately equal to that claimed by the plaintiff and substantially larger, we submit, than any valuation which can be sustained by the evidence, makes peculiarly appropriate the language of this Court as to the view to be taken of such confiscation cases.

> "In a case like this we do not feel bound to re-examine and weigh all the evidence, although we have done so, or to proceed according to our independent opinion as to what were proper rates. It is enough if we can not say that it was impossible for a fair-minded board to come to the result which was reached."
>
> *San Diego Land & Town Co. v. Jasper*, 189 U. S. 439.

The decree of the District Court should be affirmed.

Respectfully submitted,

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ARTHUR G. STONE,
PAUL W. SCOTT,
GEORGE S. WALLACE,

Counsel for the Cities of Charleston and Huntington and other Intervening Defendants,

Appellees.

November 18, 1927.

IN THE

Supreme Court of the United States

OCTOBER TERM, 1927

No. [redacted] 4

UNITED FUEL GAS COMPANY,

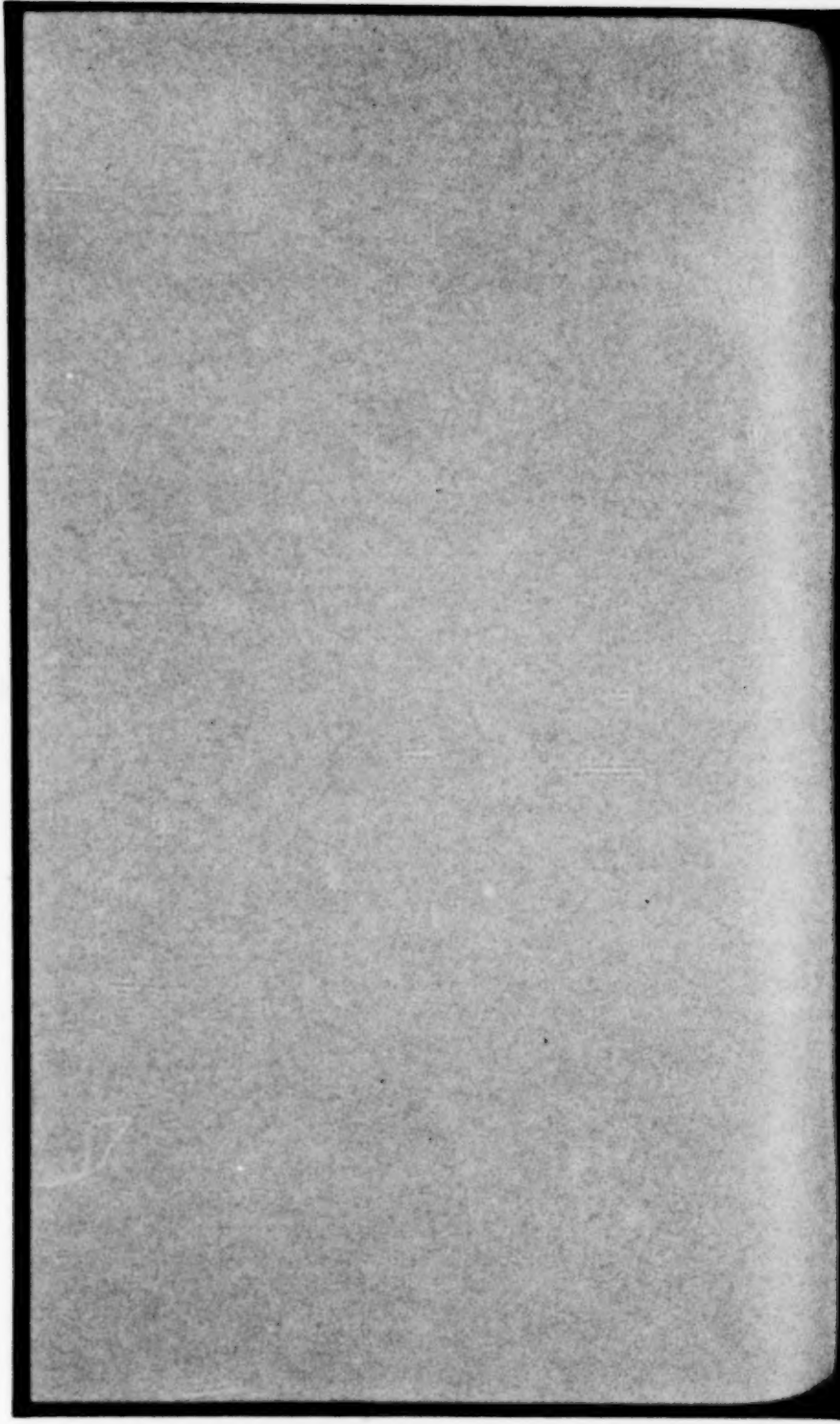
Appellant,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, *et al.*

SUPPLEMENTAL BRIEF OF INTERVENING APPELLEES, THE CITIES OF CHARLESTON AND HUNTINGTON, *et al.*

ROBERT S. SPILMAN,
ARTHUR G. STONE,
PAUL W. SCOTT,
Counsel for Appellees.



IN THE

Supreme Court of the United States

OCTOBER TERM, 1927

No. 79

UNITED FUEL GAS COMPANY,
Appellant,

vs.

THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, BIRK S. STATHERS, ERNEST D. LEWIS, *et al.*

SUPPLEMENTAL BRIEF OF INTERVENING APPELLEES, THE CITIES OF CHARLESTON AND HUNTINGTON, et al.

SCOPE OF THIS BRIEF

The purpose of this brief is to direct special attention to certain propositions already advanced in the briefs and in the first argument of the case, and to consider certain of the inquiries of the court upon that argument.

CAPITALIZATION OF PLAINTIFF'S EARNINGS

In the main brief protestants stated that the controlling question in this suit is not whether the fair value found by the commission is inadequate, but whether the value produced by capitalizing plaintiff's net earnings from its whole business from existing rates equals or exceeds any reasonable fair value sustained by the evidence. The effec-

tive values arrived at by capitalizing the net earnings at the percentages approved by the Commissioners and the District Court range from $53,300,000 to $74,300,000. (Brief, p. 59.) The most that plaintiff says in its reply brief relative to this statement of the issue is that it is a "reversal of the accepted method of approach to a discussion of rates." It is the method of approach which was adopted by the District Court.

Upon the first oral argument, however, a new element was introduced which bears directly on the application of the capitalization theory to this suit. Certain inquiries were made by the court as to the relation of the plaintiff's interstate to its intra-state business, the query seeming to be: Has the Commission given improper consideration to interstate business in fixing retail rates in West Virginia? The matter of interstate transportation has never been and is not now a factor in this case. Throughout the history of the case from 1916 to the decisions of the Court and Commission here complained of the company never has attempted to separate its business into interstate and intra-state business, and in no case has the Commission made the distinction. Perhaps these inquiries are due to the language of Judge Rose wherein he distinguishes what he terms "regulated" from "unregulated" business. In the first he included industrial and domestic consumers in West Virginia. In the second he included sales to wholesale consumers "for the most part" engaged in transporting the gas to other states and distributing it there. Plaintiff (Brief, p. 8) attempted the same distinction when it stated that its consumers were divided into two classes, (1) buyers at the state line, including the two parent companies and (2) domestic and industrial consumers in West Virginia.

Upon the argument of this case we called attention to the fact that it is error to speak of the delivery of gas at the state line. Neither Cedarville nor Balls Gap which

are the points of delivery of the greater part of plaintiff's gas sold to wholesale customers, is at the state line, the former being located about sixty-three miles from the Pennsylvania line, and the latter about twenty-five miles from the Kentucky-Ohio line. While there are a few general statements in the record that much of the gas purchased by some of the wholesale buyers ultimately went out of the state, the evidence submitted is much too meagre to constitute a basis for a finding that the wholesale business was inter-state in character and not to be considered in connection with the domestic revenues on the question of confiscation. We think the question of interstate commerce beside the point. It never has been deemed a factor in the case either by any tribunal or by the parties to the rate inquiries.

A further criticism by plaintiff's counsel of the capitalization of the whole earnings is that it is immaterial that the company's whole revenues are adequate, if it be shown that the retail rates are too low, that the latter rates alone are under investigation. Of course, protestants submit, and the Commission takes the view, that all of the rates both wholesale and retail are subject to regulation. *Protestants further submit that there is no inadequacy either in the wholesale or retail revenues.* (Brief, p. 185.)

Protestants deny the application to this case of Northern Pacific Railway Co. v. North Dakota, 236 U. S. 585, and Norfolk & Western Railway Company v. West Virginia, 236 U. S. 605. The cases are doubtless well known to the court and we, therefore, will say nothing concerning their facts except that they hold that no Commission or legislature, without regard to the full rate structure of the company involved may single out one great class of business such as the passenger service, or the coal carriage service of a mid-western railway and reduce the compensation from that class of business to the point

where the return thereon is *less than the cost or merely nominal*. While the West Virginia Commission has not yet exercised its right to fix a schedule for wholesale rates it in effect has indirectly regulated the entire rate structure when it considered the revenues from the wholesale service in fixing the retail rate schedules. It is an entire rate structure that is before this court. It is just here that the case differs materially from Northern Pacific R. R. Co. v. North Dakota

> "The court, therefore, is not called upon to concern itself with mere details of a schedule; or to view a particular tariff or schedule which yields substantial compensation for the service it embraces, when the profitableness of the state business as a whole is not involved.
>
> "But a different question arises when the State has segregated a commodity, or a class of traffic, and has attempted to compel the carrier to transport it at a loss or without substantial compensation even though the entire traffic to which the rate is applied is taken into account. On that fact being satisfactorily established, the presumption of reasonableness is rebutted."
>
> Northern Pacific Ry. Co. v. North Dakota, 236 U. S. 585, 599

It is an entire rate structure, not a separate investigation of a retail rate schedule, which was before the Commission and is now before this court.

In the main brief (p. 173) protestants cited the case of Willcox v. Consolidated Gas Company, 212 U. S. 19, as an authority directly in point. The complainant attempted to enjoin the enforcement of gas rates fixed by the legis-

lature of New York on the ground that they were confiscatory. A further claim was that there was discrimination between the rates charged the City of New York and individual consumers. On this point the court said:

> "Lastly, it is objected that there is an illegal discrimination as between the city and the consumers individually. We see no discrimination which is illegal or for which good reasons could not be given. But neither the city nor the consumers are finding fault with it, and the only interest of the complainant in the question is to find out whether, by the reduced price to the city, the complainant is upon the whole unable to realize a return sufficient to comply with what it has the right to demand. What we have already said applies to the facts now in question.
>
> "We cannot see from the whole evidence that the price fixed for gas supplied to the city by wholesale, so to speak, would so reduce the profits from the total of the gas supplied as to thereby render such total profits insufficient as a return upon the property used by the complainant. So long as the total is enough to furnish such return it is not important that with relation to some customers the price is not enough."

The Supreme Court of West Virginia announced precisely the same principles in Pittsburgh & West Virginia Gas Co. v. Public Service Commission, 101 W. Va. 63, 72.

THE RETURN FROM THE WEST VIRGINIA RETAIL BUSINESS

The return from the West Virginia retail business is fully stated and explained in the main brief. (P. 173, *et seq.*) We there undertook to show that the retail bu i-

ness paid more than its share of revenue to the plaintiff. The one point desired to be made here is to refute unequivocally the statement of opposing counsel in oral argument that the so-called parent company adjustment enters into the calculation of the earnings from the retail business in the state. That argument is founded on a misunderstanding of the facts. Whether or not the parent company revenues should be adjusted, they are a part of the *wholesale*, not the retail, business, and protestants have not considered any part of the wholesale earnings in their calculation of the West Virginia retail revenues.

PROPRIETY OF CHARGING DELAY RENTALS TO OPERATING EXPENSE

At the hearing in November, 1927, at least one member of this court expressed some surprise at protestants' position that the annual outlay of the plaintiff for delay rentals should be treated differently from any other item of operating expense. As this outlay amounted to $589,186 (R. 1276) for the year 1925 it is important that protestants' position in regard thereto be made perfectly clear. Briefly stated, it is this: If plaintiff is to be allowed the appreciated value of its lease rights in the rate base, the delay rentals which represent the cost of keeping those rights alive should not be carried as an operating expense. *Plaintiff insists upon considering the lease rights as part of its capital assets to the same extent as if it were seized of the gas underlying the leases in fee simple.*

Protestants maintain that if plaintiff is to be considered as owning the gas, the cost of securing and preserving such gas cannot be deemed an operating expense. Protestants claim that the plaintiff company had no right to deduct this sum of $589,186 from gross earnings in calculating its net profits. The Commission allowed this item of delay rentals as an operating cost, consequently, in determining the value of plaintiff's property

upon which it is earning a fair return by the method of capitalizing its net earnings at 8% (as the protestants have done) this item of delay rentals should be added to the net earnings found by the Commission, and the effective amount resulting from the capitalization of the whole sum would constitute the effective rate base. Wherever protestants have taken this item into account in their tabulations, the calculations have proceeded upon that theory. The annual delay rental in no sense represent a maintenance charge; they constitute an essential cost of creating the rights which plaintiff contends should be treated as absolutely owned by it.

ADJUSTMENT OF GASOLINE EARNINGS

During the first argument of the case one member of this court inquired in substance why, if the manufacture of gasoline is but an incident to the gas industry, all of the earnings from such incidental business should not be added to the earnings from the gas. As pointed out in the main brief (P. 23) this was the position which was taken by the protestants in the earlier hearings. The following table shows what the results would be if it were adopted now:

Net earnings available for depletion, depreciation and return, after including only one-half of gasoline net earnings (R. 1161 and protestants' brief, page 19)	$	5,694,229.00
Add—remaining 50% of gasoline net earnings for 1923 (R. 1158)		934,393.00
Total net earnings including all of gasoline earnings	$	6,628,622.00
Effective valuation of plaintiff's whole property on 8% capitalization basis	$	82,858,000.00
Present Fair Value Alleged in Plaintiff's bill (R. 7)	$	64,621,000.00
Add—Gasoline plant and equipment at cost of reproduction less depreciation (R. 225)		2,399,561.00
Total including Gasoline Plant	$	67,020,561.00

PLAINTIFF'S VALUATION OF THE GAS RESERVES

Accepting, for the purpose of the argument, plaintiff's contention that the gas reserves must be included in the rate base, protestants maintain as fundamental in this case that there can be no valuation approved for the gas

reserves that will result in a computed cost for the gas produced therefrom that is in excess of what the record shows to be the fair and generally accepted market price for gas in the field. The plaintiff's own witnesses show that the fair market value of gas delivered in the field is approximately 10 cents per M cubic feet. Out of this market value the owner of the gas must pay the lifting cost and other operating expenses and the remainder represents the value of the gas under ground, from which the owner's particular reserve may be shown to have either a large or small value. The estimated cost of gas in the field can never exceed this generally accepted market price, for if it did, obviously it could not be sold. Therefore, any valuation theory that produces a higher cost of gas to the public than the fair market price of gas is an erroneous theory.

The above proposition becomes very significant when applied to the valuation estimates of the plaintiff's witnesses. The following table shows what the fair market value for gas in the field would have to be in order to support Mr. Uebelacker's valuation of $36,449,176:

VALUE OF GAS IN THE GROUND IF MR. UEBELACKER'S VALUATION FOR ACREAGE IS TAKEN AS A BASIS

	Annual Amount	Cents per M cubic feet based on 1923 consumption of 47,040,235 M cubic feet
Return of 8% on value of leaseholds ($36,449,176) fixed by Uebelacker Exhibit 1—R. 537	$ 2,915,934	6.199
Amortization of Proven (and probable) Acreage per Uebelacker Exhibit 5—R. 575	1,868,524	3.997
Amortization of Unproven Acreage per Uebelacker Exhibit 5—R. 575	299,432	.637
Operating Expenses applying strictly to Leaseholds per Uebelacker Exhibit 5—R. 582		
Leasehold Expense	48,702	.104
Rentals on Unoperated Leaseholds	628,523	1.336
Well Royalties	*	
Total Fixed Charges and Operating Cost Applying Strictly to Leaseholds	$ 5,761,115	12.273**
Lifting Cost per M cubic feet Uebelacker Exhibit 1—R. 526		5.431
Total Cost which should be comparable with fair market price of gas in field		17.704

*Included by Mr. Uebelacker in lifting costs below. See R. 523.
**This cost compares with a fair market value for gas in the ground of 5 cents, according to Mr. Uebelacker's own estimates.

These figures show that in order to support a valuation of $36,449,176 for the acreage, the company is charging the consumers the equivalent of 17.704 cents per M. cubic feet for gas *in the field*, yet the testimony offered by the plaintiff shows a value of but ten cents. (Five cents value in the ground plus lifting costs). Mr. Uebelacker's conclusion from all the evidence is that the gas in the ground is worth five cents per M. cubic feet (R. 535). On the basis of his total valuation of $36,449,176, however, the value of the gas *in the ground* would be 12.273 cents per M. cubic feet. The conclusion must follow that the estimate of Mr. Uebelacker is destroyed by his admitted valuation of five cents per M. C. F. for the gas in the ground, a valuation which protestants think is at least two cents too high (Brief, p. 146). Mr. Davis arrived at approximately the same valuation, though by a different method.

THE "MERCHANT" THEORY

Counsel for plaintiff in oral argument last November stated that the company is more than a service company, that it is "primarily a merchant", that it is selling a certain commodity, namely, natural gas. Protestants are in complete accord with this characterization of plaintiff's business. It is the same idea which prompted Judge Rose to suggest the theory which we have termed in the brief the "gas purchased" theory (Brief, p. 146). Other merchants in selling goods expect a price sufficient to meet the cost of the units of merchandise as they are sold over the counter together with a fair return upon their equipment and labor, a return which they designate as profit. Why should plaintiff expect more? Or, as Judge Rose puts the issue: Why should plaintiff who owns the gas be treated differently from another company which buys gas and distributes it, charging the cost thereof to its operating expenses? As stated in the main brief, Mr.

Hagenah anticipated the court in the development of this solution of the case. His exhibits 7 and 7-A (R. 1224) show the results for the West Virginia retail business on the basis of substituting the value of the gas in the ground in the operating expenses at the rate of five cents per thousand cubic feet. He eliminated all annual expense items relating to the leases from operating costs and gave the gas rights no place in the rate base. In short, he assumed that the gas reserves were owned by parties entirely disassociated from the plaintiff. However, in the exhibits referred to Mr. Hagenah assumes that the value of five cents in the ground also covers the privilege to the purchaser of extracting the gasoline, while Mr. Uebelacker contends that the value of five cents is exclusive of the extraction privilege; in other words, that the seller on this basis would be entitled to extract the gasoline and still sell the gas at five cents per M cubicfeet.

Our purpose is to show that upon the merchant theory every point of controversy as to the value of the gas in the ground, including Mr. Ueblacker's contention as to the gasoline, can be conceded to the plaintiff, and the latter will still earn a reasonable return from its West Virginia retail business. We do this by adjusting Mr. Hagenah's exhibit shown in the brief at page 164 so as to deduct from the net earnings the revenue from gasoline. The following table is the result:

Net Earnings from West Virginia retail business available for depreciation, amortization and return per table opposite page 164 of Protestants' brief—See also R. 1224	$1,285,736
Deduct Portion of Gasoline Net Earnings assigned to West Virginia retail business—R. 1161	234,626
West Virginia retail business before considering any gasoline credits	1,051,110
Less West Virginia portion (29%) of Depreciation shown by the record to have actually been sustained over 14½ year period ($203,463.—R. 128)	59,004
Net Earnings available for Amortization and Return	992,106
Fair Value (of property exclusive of leaseholds) for West Virginia retail business on which amortization and return are earned at 11.65 per cent	$8,515,931

It will be seen from this table that after including in the operating expenses an item of five cents per M. cubic feet for all gas produced during the year, and after eliminating entirely from consideration the gasoline question, the adjustment for sales to parent companies and the question whether amortization should be calculated upon cost or present value, that is, accepting the latter basis as the proper one, the company is earning in its West Virginia retail business $992,106. Accepting Judge Rose's percentage of 11.65% for return and amortization, the plaintiff is in position to amortize and earn a return upon a fair value of $8,515,931, for all its property used in the West Virginia retail business, except its gas rights. The table at page 180 of the main brief shows that this sum is equivalent to a value of from $25,000,000 to $26,000,000 for

the physical property, $990,000 for working capital and $3,000,000 for going value. No higher values can be sustained upon the record.

If the protestants' view that gas in the ground is worth only 3 cents per M. cubic feet after the gasoline has been extracted be adopted, the net earnings from the West Virginia retail business before deducting for depreciation and amortization would be 1,285,736. (Brief p. 164.) Deducting $59,004 for depreciation and capitalizing the remainder $1,226,732, at $11.65%, there results an effective valuation for the physical properties devoted to the West Virginia retail business of $10,529,888.

It seems inescapable that the "merchant" or "gas purchased" theory is a logical and constructive way to meet the questions presented in a natural gas rate case where the utility is in the business of producing as well as selling natural gas. In this connection the very recent case of *Re* American Indian Oil & Gas Co., decided by the Oklahoma Corporation Commission in March of this year has particular significance. As this decision is not yet available in a bound volume a considerable part thereof is included as a supplement to this brief.

Respectfully submitted,

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ARTHUR G. STONE,
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Counsel for Intervening Appellees.

October 12, 1928.

SUPPLEMENT

Excerpt from *Re: American Indian Oil & Gas Co.*, P. U. R. 1928C, page 815.

There has been much contention between counsel on both sides of this case as to the proper method or manner of ascertaining the value of the gas leases and wells, or the value of the gas to be used by the public. It is contended by the attorneys for the consumers that the only method heretofore approved by the courts is that the Commission should find the value of the leaseholds, including the wells and equipment used thereon, and that a rate should be predicated upon that value, which would make a return upon the investment, allowance for proper depletion of the gas in the field, and proper depreciation of the equipment. The attorneys for the applicant do not contend that the above is not a proper method of determining the rate basis as to the gas, leases and gas properties, but that that method is not exclusive. They further contend that where gas at the mouth of the well has an established and independent market, and a value other than that fixed by the rate sought to be prescribed by the Commission, that the property can be more accurately valued by using the market value per thousand cubic feet of gas at the well. In other words, applicant contends that when the unit of value or yardstick is detrmined, that the leases and wells thereon can never have a greater or lesser value than the amount of gas it will produce at the unit price.

However, for the Commission to undertake to fix a market value of the gas field by using the unit price of gas, and the estimated amount of gas in the field, would be speculative, first, as to the actual amount of gas in the field, and second, as to the amount of recovery under special or particular conditions that may be different in gas fields, and the probable life of the gas field, all of which is taken into consideration by the purchaser in fixing a market value of the field.

In this case the applicant does not contend that it has any reserve leases being held for the use of the public upon which it seeks a valuation to be considered by the Commission in establishing a rate in this case. Hence the Commission in this case will not attempt to, nor consider, the fixing of a fair market value of the leaseholds, wells, and equipment thereon, or the expense of operating the same, but will fix a market value of the property or gas of the applicant that is actually being used.

The opinion of Judge Woodrough in the application for injunction in the Federal Court, in discussing this phase of the controversy, said:

> "But the Master finds that the whole basis of rate fixing by the Commission is unjust and tends to confiscation, and that an entirely different basis ought to be adopted which might be briefly described in this way: In this and other natural gas rate fixing cases the Commission treats a utility company that serves natural gas to the public as though it were a water company serving water from a stream. In such water utility cases no value need be put on the water itself either in the stream or in the pipes. The utility company need only be compensated for its riparian properties, equipment, and service. Similarly in this and other natural gas cases the Commission ascribes no value to the gas at the well head and values only the utility's interest in the land abutting upon the gas pool, its equipment, and service. The Master finds that the gas itself when it has been captured by the utility company and brought to the well head is a valuable merchantable commodity, the property of the company, which ought not to be taken for public use without fair compensation. He finds that in this case the proof is clear that there is an actual sale value for this company's gas

at its well heads of at least 7½ cents per million cubic feet with willing purchasers at hand ready to buy. He concludes, therefore, that any system of valuation for rates which results in compelling plaintiff to distribute its gas to the public for less than it is demonstrably worth, is wrong.

> "I agree with the Master and am satisfied that those who capture natural gas and have it at their well heads with demonstrable market value must be protected as other owners of the property, and cannot lawfully be compelled to deliver it to the public without just compensation."

The question now necessarily arises, when does gas become property so as to come within the above rule. The decisions of the courts are without exception that gas, when reduced to possession, is a commodity; that gas, when reduced to possession, is property; that when reduced to possession, the owner has the same property right therein that he would have in a ton of coal or a cord of wood.

In the case of West v. Kansas Nat. Gas Co., 221 U. S. 229, 255, 55 L. Ed. 716, 31 Sup. Ct. Rep. 564, the Court said:

> "Gas, when reduced to possession, is a commodity; it belongs to the owner of the land; and when reduced to possession, is his individual property, subject to sale by him, and may be subject of intrastate commerce and interstate commerce."

Again:

> "Natural gas is as much a commodity as iron ore, coal, or petroleum or other products of the earth, and can be transported, bought, and sold as other products."

The Court further says:

> "It is not a commercial product when it is in the earth, but becomes so when brought to the surface and placed in pipes for transportation."

In this case the undisputed testimony is that the applicant can sell its gas after it is captured, and in the pipeline at the mouth of the well, for 9 cents per thousand cubic feet, and this market is for private or independent uses, other than the use in the city of Poteau and vicinity. In other words, the market value of this gas, as established in this case, does not depend upon the rate or the market in Poteau.

Section 7934 Compiled Oklahoma Statutes, 1921 confers jurisdiction and authority upon the Commission to fix the value of gas at the mouth of the well, where a pipeline purchaser and an independent producer may disagree as to the price which the purchaser should pay. The Commission has heretofore exercised this authority and fixed the price at the well which the pipeline should pay the producer of gas after the gas was captured. The Commission in fixing a rate, could not fix a basis lower for the company's own gas than the rate which it should pay for other gas in the same vicinity or adjoining territory.

The finding of the value of gas at the well, and basing the rate thereon was before the Commission in the case of *Re* Western Nat. Gas Co. to increase gas rates, decided December 31, 1918, reported in P. U. R. 1919 B, 76, wherein the Commission said:

> "The best way of securing an equitable natural gas rate adjustment is to separate the producing from the distributing end of the business, allow a reasonable price for gas at the wells; determine the expenses necessarily incurred in gathering, transporting, and distributing gas, determine the depreciation of the property and the amount neces-

> sary to make a rasonable return upon the investment in the property used and useful; and use these factors as a basis for determining equitable rates."

On page 79 in the body of the opinion, the Commission says:

> "By using an estimate of 6 cents per thousand cubic feet, the estimate given by various public service corporations, and found by the Commission to be reasonable, for the cost or value of natural gas at the well, and allowing line losses and expenses which are unavoidable in gathering, transporting and distributing natural gas, it is apparent that 10 cents per thousand cubic feet is the minimum at which gas can be sold at Checotah and Eufaula, without loss to the company. On the record before the Commission, the present rate schedule will not be disturbed, except in so far as the minimum is concerned. Gas can no longer be sold below 10 cents per thousand cubic feet."

In the above case the Commission did not attempt to find the value of the leaseholds, as indicated in the opinion, for the reasons therein stated, but did find the value of the commodity at the mouth of the well used by the public, observing the distinction between the speculative or market value of the leases, and the market value of the commodity which was actually being used from day to day.

Judge Woodrough, when this same matter was pending in the Federal Court, approved the findings and recommendations of the Master, wherein the Master said:

> "The Master finds that the gas itself when it has been captured by the utility company and brought to the well head is a valuable merchantable commodity, the property of the company, which ought

not to be taken for public use without fair compensation. * * *"

I agree with the Master and am satisfied that those who capture natural gas and have it at their well heads with demonstrable market value must be protected as other owners of property and cannot lawfully be compelled to deliver it to the public without just compensation.

The undisputed evidence in this case is that the market value of this gas at the mouth of the well is 9 cents per thousand cubic feet, assuming that there will be some additional expense in operating the wells, the Commission finds and fixes the market value of the gas at the well on the leases of the American Indian Oil & Gas Company at 8 cents per thousand cubic feet.

The Commission will, therefore, in determining the proper rate to be charged for the sale and distribution of natural gas in the city of Poteau by applicant company, do so upon the basis of a market value of the gas produced by applicant, of 8 cents per thousand cubic feet for all gas sold and delivered in the city of Poteau and vicinity, upon the basis, in so far as the transmission and distribution system is concerned, of a value of that property of $115,910.

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In the

Supreme Court of the United States

OCTOBER TERM, 1927

Number [redacted] 4

UNITED FUEL GAS COMPANY,
Appellant,
vs.
THE PUBLIC SERVICE COMMISSION
OF WEST VIRGINIA, et al.,
Appellees.

BRIEF ON BEHALF OF THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, IN REPLY TO THE BRIEF ON BEHALF OF APPELLANT.

F. M. LIVEZEY,
Attorney for Public Service
Commission of West Virginia.

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BRIEF ON BEHALF OF THE PUBLIC SERVICE COMMISSION OF WEST VIRGINIA, IN REPLY TO THE BRIEF ON BEHALF OF APPELLANT.

STATEMENT OF CASE

For convenience, the appellant will be hereinafter referred to as "gas company," the Public Service Comission of West Virginia, one of the appellees, as "the Commission," and the City of Charleston, the City of Huntington, and other intervenors, as "the protestants."

On behalf of the Commission it is desired to correct and supplement the history of the case and the statement of facts as contained in the brief on behalf of appellant, in the following particulars:

The date of the order of the Commission granting the gas company an increase of five cents per thousand cubic feet for gas sold, referred to on page 2 of brief on behalf of appellant as having been made on February 20, 1923, was not made by the Commission until August 9, 1923. (R. 158.)

It is to be observed from statement in the brief of appellant and from the record, that the Columbia Gas & Electric Company and the Ohio Fuel Supply Company own, respectively, 51 per cent and 49 per cent of the capital stock of the United Fuel Gas Company. The gas company has for several years been selling gas in enormous quantities to the Columbia Gas & Electric Company and the Ohio Fuel Supply Company, hereinafter referred to as the "parent companies," and other distributing gas companies, at wholesale rates. The rate charged to the parent companies, however, has been very low. In all the previous proceedings before the Commission, in ascertaining the earnings of the gas company the Commission has made an adjustment in the earnings by adding thereto a sum estimated to represent the difference in the amount received by the gas company from its parent companies for gas so sold, and the amount it would have received if such gas had been sold to independent companies. In the opinion resulting in the

order of August 9, 1923, the Commission estimated that the earnings of the gas company should be adjusted on account of the sale of gas to parent companies by increasing such earnings at least one million dollars. It appeared in such proceeding that the gas company was at that time selling gas at wholesale rates to the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company, and that if the gas company had charged its parent companies the same rate as it charged the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company it would have received from the parent companies for gas sold them in 1922, $1,463,398.93 more than under the contract rate. Upon appeal to the Supreme Court of Appeals of West Virginia by the City of Charleston and others, pursuant to statute, the Court held that the Hope Natural Gas Company and the Pittsburgh & West Virginia Gas Company in practical effect enjoyed no special advantages over the two parent companies, and hence, that the parent companies should pay as high a rate as the two former companies, and that, therefore, the earnings of the gas company for the year 1922 should be adjusted by an increase of $1,463,398.93 instead of an increase of $1,000,000.00, as determined by the Commission.

From the year 1916 until May 1, 1922, the gas company treated the gas transported through its mains for the purpose of producing gasoline, which process resulted in a rather large earning to the company. During that period the Commission, in considering rate cases before it involving rates of the United Fuel Gas Company, as well as other gas companies, held, with respect to such gasoline business, that the reason-

able value of the use of gas for the purpose of the manufacture of gasoline should be credited to the gas expense and allocated between the wholesale and retail departments, and between localities, on the basis of sales, and that such reasonable value should be fixed at one-half the net earnings arising from the manufacture of gasoline.

On May 1, 1922, the gas company caused to be organized the Virginian Gasoline & Oil Company, to which was conveyed by the gas company its gasoline business, including certain gasoline stations, the lands upon which they were located, tank cars and gasoline on hand, and all of the company's oil interest in certain operated and unoperated acreage in West Virginia and Kentucky, in consideration of the Virginian company assuming the payment of certain bonds of the gas company, and the issue and transfer of 8,899 shares of its capital stock to the gas company, which stock was subsequently transferred to the parent companies in proportion to their stock holdings in the gas company. On the same day the gas company entered into a contract with the Virginian Gasoline & Oil Company, which will be hereinafter referred to as the "gasoline contract," and which provided that the Virginian company should have the exclusive right of extracting gasoline from the gas transported through the gas company's lines, for which right the Virginian company agreed to pay the gas company a royalty of one-eighth of the gross proceeds of sale of gasoline produced by it from the gas company's gas. In the proceedings resulting in the order of the Commission of August 9, 1923, it was contended by the gas company that the gasoline contract was a fair one, that there

was an adequate consideration therefor, and that one-eighth of the gross revenue was fair compensation to the gas company for the privilege thereby granted. The majority opinion of the Commission sustained this contention. It appeared that one-eighth of the gross revenue from the sale of gasoline produced under the privilege was very much less than one-half of the net proceeds of the sale of such gasoline. On appeal to the Supreme Court of Appeals of West Virginia it was held that the reasonable value of the use of natural gas of a public service company for the purpose of the manufacture of gasoline therefrom, as shown in such case, was one-half of the net income derived from the production and sale of such gasoline, and that the transfer from the gas company to the Virginian Gasoline & Oil Company and the gasoline contract should be ignored in the rate case before the Commission. The Court's opinion in such case, as stated in appellants' brief, is reported in 95 W. Va. 91, and 120 S. E. 398, and from an examination of which it will be seen that the reversal in such case was not based alone on the insufficiency of the evidence with respect to the value of the gas company's gas rights.

The Commission and other defendants named in the bill filed by the gas company in the District Court of the United States for the Southern District of West Virginia, filed their answer to said bill. By reference to the eleventh clause of the bill of complaint (R. 18-22) it will be seen that the gas company complains that in determining the gas company's net income for the year 1923, the Commission added to the actual income of the plaintiff the sum of $2,143,661.46, being the

difference between what the gas company charged its parent companies for gas sold to them and what the Commission thought should have been charged, and also by adding the further sum of $934,393.41, representing one-half of the net profits from the manufacture of gasoline for the year 1923. In the answer filed by the Commission (R. 145, et seq., 157) it is alleged that such issues have been before the Commission heretofore, and were before the Commission in the case resulting in the order of August 9, 1923, which was appealed by certain protestants to the Supreme Court of Appeals of West Virginia, and, as hereinbefore stated, that court held that in ascertaining the revenues of the gas company the two parent companies should be required to pay as high a rate as other independent companies paid for the purchase of gas under similar conditions and circumstances, and that at least fifty per cent of the net profits from the gasoline business should be included in the net earnings of the gas company, notwithstanding the transfer to the Virginian Gasoline & Oil Company and the gasoline contract hereinbefore referred to. The Commission and other defendants named in said bill, therefore, answered that the issues with respect to the proper method of the treatment of the gas company's revenue in connection with gasoline earnings and the sales of gas to parent companies have been fully and finally determined by the Supreme Court of Appeals of West Virginia by its order and decision made on the 27th day of November, 1923, in the case therein known as The City of Charleston, et al. vs. Public Service Commission, et al., and in which said proceeding the gas company was one of the appellees and in privity with the Commission, and in which said appeal

and proceeding the issues, evidence and exhibits with respect to the questions aforesaid were identical with the issues, evidence and exhibits in the subsequent proceeding before the Commission, and in which the order of March 24, 1925, was made, and of which the gas company is now complaining, and that by reason thereof such issues have become, and are, as to the parties hereto, *res adjudicata*. (R. 159-160.)

The Commission and other defendants named in said bill further answered and denied that the order of the Commission of March 24, 1925, denying the gas company any increase in rates was, or is, confiscatory, or that the same resulted in a taking of the gas company's property without just compensation, in violation of the Fourteenth Amendment to the Constitution of the United States.

As stated in appellants brief, there is little or no dispute as to any matter of fact. But, there are substantial differences in the application of economic and legal principles. The gas company's property, the present fair value of which constitutes the basis for rate making, aside from going value and working capital, is classified as "production, transmission and distribution systems." With respect to the values fixed by the Commission and the court below for the property embraced in these systems, there is no substantial complaint except as to the value given to gas rights which are embraced in the production system. On these gas rights the company claims a value of more than $36,000,000.00. Commissioner Stathers fixed the value of $6,361,511.42, and Commissioner Divine fixed a value of $10,500,000.00, both of whom concurred in the order denying the gas company any increase in

rates, while the court below held that the value of such rights presently used and useful in the public service was not in excess of $10,317,311.39.

Such gas rights consist of certain rights in 814,910.68 acres, situate mostly in West Virginia, and a small part thereof in Kentucky, and of which the gas rights in 41,969.47 acres are owned in fee, and the remainder is held under written leases. This acreage is classified by witnesses on behalf of the gas company as 68,900.72 acres "operated," that is, on which there are producing wells, and 746,009.96 acres as "unoperated," that is, on which there are no producing wells. Said acreage is further classified by such witnesses as "proven acreage," that is, in which the existence of gas has been shown, and "probable acreage," that is, acreage which will probably produce gas, and "possible" and "unfavorable" acreage. The proven acreage is estimated at 136,384 acres, of which 114,784 acres have been tested, and 21,600 acres not tested. The probable acreage is estimated to be 126,208 acres, and the possible and unfavorable acreage 552,318.68 acres.

The territory subject to lease is covered by contracts of lease containing, respectively, various and sundry provisions as to initial consideration, term, rentals and royalties. The greater part of such leases provide that, in consideration of an initial payment, ranging from 25 cents to one dollar per acre, the lessee shall have the right to explore for oil and gas on the premises for a term ranging from one to ten years, and as long thereafter as oil or gas is produced in paying quantities, by the payment of an annual rental of so much per acre, ranging from 25 cents to one dollar,

called "delay rental," until oil or gas is found, and thereafter a proportion of the oil produced, usually one-eighth part, and so much per annum for each producing gas well, usually $300.00 per well per annum, with the right to the lessee to abandon and surrender such leases, for a nominal consideration, at any time before oil or gas is discovered. Under these leases the lessee acquires no vested interest in the gas until it is discovered.

It has been the uniform practice of the gas company to charge the initial or cash payments made for such leases to capital account, and subsequent carrying charges, including delay rentals, are charged to operating expense.

In 1909 the United Fuel Gas Company acquired all of the leases and other property of the Hope Natural Gas Company in southern West Virginia, and all of the leases and other property of its predecessor, the United Fuel Gas Company, and of the United States Natural Gas Company. The acreage thus acquired was 1,056,443.58 acres, for which a value was assigned on the books of the purchasing company of $7,233,538.96. This value was fixed without regard to the cost or investment in such acreage. From July 1, 1909, to December 31, 1923, the gas company acquired an additional acreage of 1,100,887.09 acres through gas property purchased and leases acquired. During the same period it surrendered, abandoned, or otherwise disposed of, 1,342,419.99 acres, leaving within its control on December 31, 1923, said 814,910.68 acres. The actual book cost of such acreage was less than $2,000,000.00, but, due to the appraisal or value assigned thereto at the time of purchase in 1909, or

soon thereafter, the cost as shown upon the company's books as of December 31, 1923, was $6,343,329.67. (R. 116.) This figure, adjusted to include additional acreage acquired and surrendered to November 30, 1924, is found to be $6,361,511.42, being the value assigned to such gas rights by Commissioner Stathers. (R. 117.)

Of course, the issue presented by the plaintiff's bill is, Are the rates permitted by the order of the Commission confiscatory? Determination of such issue involves the ascertainment of the fair value of the property of the gas company and its earnings. If the earnings under the present rates are sufficient to afford a reasonable return on the fair value of its property, then it would not be entitled to relief as prayed for in the bill, no matter what errors may have been committed by the Commission, or what discriminations may result from the Commission's order. Consequently, the record before the Commission was not to be reviewed by the court below for error as upon writ of error, appeal or certiorari.

From what has been said, and what will be hereinafter shown, the main questions to be determined are, (1) What is the fair value of the gas company's gas rights, used and useful in the public service? (2) What is the proper method of treating the earnings of the gas company from the gasoline business? (3) In ascertaining the earnings of the gas company, should it be required to account for gas sold to its parent companies on the same basis as sales made to other independent distributing companies?

ARGUMENT

SUMMARY

I. Fair value of gas company's property used and useful in the public service.

(1) The gas leases constituting the greater part of gas rights and properties are chattels real, but do not give any vested right in the gas in place until after discovery and extraction.

(2) The value of such gas leases is not the sales price per cubic foot of the estimated quantity of gas in a given field, but the value of the leases.

(3) The value of gas rights is not in excess of $10,500,000.00, and the only competent proof before the Commission or the court below as to such value is the book cost, which to November 30, 1924, was $6,361,511.42.

(a) *Evidence on behalf of gas company speculative and unreliable.*

(b) *Burden on gas company to show fair value.*

(4) Gas rights should be included in valuation as rate base only to the extent that they are used and useful in the public service.

(5) There can be no substantial complaint as to the value fixed by either the Commission or the court below as to the gas company's tangible or physical property, going concern value and working capital.

(6) The court below did not err in not including in the value of the tangible or physical property the sum of $2,044,778.24 on account of new investment in such property added and put in use during the year 1924.

(a) *The court below used the value as of December* 31, 1923, *and the earnings for the calendar year* 1923 *in in the calculation for the purpose of ascertaining the return afforded.*

II. The value of the gas company's property used in the service of its domestic and industrial consumers within the State of West Virginia was not more than $11,251,499.00.

III. The allowance of 3.65 per cent per year of the value of the gas company's property was a generous allowance for amortization.

IV. In adjusting the earnings of the gas company for the year 1923, the commission and the court below added to the earnings as reflected by the company's books the sum of $2,143,661.46 (not $1,495,-496.69) on account of sale of gas to the parent companies.

(a) *This adjustment is equitable and proper.*

(b) *Adjustment in accordance with former adjudication by the Supreme Court of Appeals of the State of West Virginia.*

V. The commission and the court below adjusted the gas company's earnings for the year 1923 by adding thereto the sum of $934,393.41 on account of gasoline earnings.

(a) *This adjustment is proper and equitable.*

(b) *Adjustment is in accordance with former adjudication by the Supreme Court of Appeals of the State of West Virginia.*

VI. The rates complained of in the bill are sufficient to produce a fair return on the value of the gas company's property, and such rates are, therefore, not confiscatory.

VII. The order of the District Court refusing an interlocutory injunction should be affirmed.

ARGUMENT

I

FAIR VALUE OF GAS COMPANY'S PROPERTY USED AND USEFUL IN THE PUBLIC SERVICE.

From what has heretofore been said, and an analysis of the values contended for by the gas company, and those fixed by the commission and the court below, it is apparent that the main question is the proper value to be placed on the gas company's gas

rights and leaseholds, and what part thereof are presently used and useful in the public service. It is, therefore, pertinent to first inquire as to the nature of such right.

1. The gas leases constituting the greater part of the gas company's gas rights and properties constitute chattels real, but do not give any vested right in the gas in place.

As heretofore shown, the gas company controls 814,910.68 acres of gas territory, of which 41,969.47 acres are owned in fee, and the remainder is held under lease. While little information was furnished to the commission as to the character, nature and terms of such leases (R. 108-109), an effort was made in the court below to supply such omission by the introduction before the court of specimens of all forms of leases in common use by the gas company (R. 1031-1058), with a tabulation of the acreage held under certain classes of such leases. (R. 1014-1030.) Such leases are obtained for an initial consideration, called a bonus, usually being equal to the first quarterly rental thereunder. The greater number of the leases are for a term of ten years, provide for a delay rental of one dollar per acre per year until a producing gas well is drilled in, when the rental is changed to so much per well per year, usually $300.00. (R. 371.) The right to surrender by lessee for nominal consideration is reserved in all leases. Under these leases the title to the gas remains in the lessor and continues as his property until it is extracted, when the title vests in the

lessee. The only right given to the gas company under its lease is the right to explore for oil and gas and to produce them when found. This is the law of West Virginia.

Headley vs. Hoopengarner, 60 W. Va. 626, 55 S. E. 744.

The decisions of state courts relative to the status of property constitute rules of property, and should be accepted and applied by the Federal Court.

Guffey vs. Smith, 237 U. S. 113, 59 L. Ad. 856; 35 Sup. Ct. Rep. 526.

2. **The value of such gas leases is not the sales price per cubic foot of the estimated quantity of gas in a given field, but the value of the leases.**

Since the lessee acquires no vested right in the gas in place until it is discovered by drilling, and the right to explore therefor being dependent upon compliance with the terms and conditions of the lease, it would seem to follow logically that the gas content in an undeveloped lease would not form the basis of value for such lease. The use of an estimated quantity of gas in the ground as a basis for determining the value of gas leaseholds is attended with so much speculation, uncertainty and varying contingencies as to be of little use.

City of Charleston vs. Public Service Comm'n, et al., 95 W. Va. 91, 120 S. E. 398;

Re United Fuel Gas Co., P. U. R. 1920-C, p. 583.

3. The value of gas rights is not in excess of $10,500,000.00, and the only competent proof before the commission or court as to such value is the book cost, which to November 30, 1924, was $6,361,511.42.

Commissioner Stathers allowed a value on all the gas rights of $6,361,511.42, that being the book cost, on the theory that such was the only competent evidence of value before the commission. Commissioner Divine allowed a value of $10,500,000.00, but it is not quite clear as to just how he arrived at this figure. Both Commissioner Stathers and Commissioner Divine concurred in the order denying the gas company any increase in rates. The court below said that $10,317,311.39 was the highest valuation which could be put upon such portion of the gas company's reserves as it has any claim to include in its rate base. The gas company claims a value of over $36,000,000.00 on its reserves, and that the whole thereof should be included in its rate base.

(a) *Evidence on behalf of gas company speculative and unreliable.*

Since the greater part of appellants gas territory is held under leases which do not give any vested right to the gas in place, and because of the many contingencies involved, it is submitted that estimates of the quantity of gas in territory covered by such leases should not be used as a basis of value.

American Indian Oil & Gas Co. vs. Poteau (Okla.), 235 Pac. 906, P. U. R. 1926-A 236;
City of Charleston vs. Public Service Comm'n, 95 W. Va. 91, 120 S. E. 398.

In the case of City of Erie vs. Public Service Commission (Pa.), 123 Atl. 471, P. U. R. 1924-D 89, the court in its opinion said:

> "The value of the land is not the selling price of a cubic foot of gas as applied to the supposed quantity in a given field; its value is fixed as a whole or at so much an acre."

However, if any weight is to be given estimates of quantity of gas in the ground, some unit value must be applied thereto to arrive at a value for the whole. Such unit value should be ascertained by some dependable measure of experience, and without regard to present earnings of the gas company.

In support of the value claimed for its gas rights the gas company relies upon two classes of evidence: the first, that given by Mr. Ralph E. Davis and Charles F. Uebelacker, both highly technical experts, and the second, that shown by the testimony of T. O. Sullivan, John B. Corrin, T. B. Greggory, John Davidson, and others, as practical and experienced gas men.

The testimony of Mr. Uebelacker appears in the record, page 195 et seq., and that of Ralph E. Davis at page 229, et seq. Mr. Davis arrives at a value for the proven and probable acreage of $32,458,129.17, while Mr. Uebelacker arrives at a valuation for the same property of $33,185,000.00. It is deemed unnecessary

here to detail the method by which these witnesses arrived at such values, for the same is fully detailed in appellant's brief and explained in the record. It will suffice to say that the methods used are based upon theories, speculations and suppositions, which it is submitted form no safe basis for arriving at a value, and which has heretofore been condemned by the West Virginia court.

It should be observed that Mr. Davis, in arriving at his value, assumes that the gas company may dispose of its gas in the most advantageous way and without any restriction or regulation whatever. From the nature of the gas company's business, it is at once obvious that this is an impossibility.

The next class of evidence relied upon by the gas company in support of its claim is that of the witnesses in the gas business. These witnesses give their estimates of the value of the company's gas rights at anywhere from $30,000,000.00 to $45,000,000.00. (R. 279, et seq.) An analysis of the testimony of these witnesses will disclose that their estimates are based upon either the earnings of the gas company or a supposed market for its gas at varying prices. This character of testimony has heretofore been produced before the commission and was the subject of review by the Supreme Court of Appeals of West Virginia in at least two cases.

City of Charleston vs. Public Service Comm'n, 95 W. Va. 91, 120 S. E. 398;
Natural Gas Co. of W. Va. vs. Public Service Comm'n, 95 W. Va. 557, 121 S. E. 716.

In City of Charleston vs. Public Service Commission, *supra*, the testimony of Ralph E. Davis, of a character similar to that before the commission and before the court below, was the subject of review by the Supreme Court of Appeals of the State of West Virginia, and wherein it was held by the court that his estimates were too uncertain to form a basis for a valuation of the company's leasehold.

In Natural Gas Company vs. Public Service Commission, *supra*, in discussing the testimony of witnesses as to the value of gas leaseholds the court says:

> "Generally speaking, evidence of value in a rate-making case cannot be based upon the rate of return or earnings of the utility; and whenever this appears, either directly or indirectly, such evidence is incompetent. It is almost inconceivable that there can be an open market for these gas leaseholds, situate as they are, which would not be based upon the rates at which the utilities there are selling gas to the public."

With these decisions of its own state court before it, the commission could hardly do otherwise than reject the evidence before it as to appreciated value of appellant's gas rights. It is said, however, that the evidence before the court below meets the criticism of the Supreme Court of Appeals of West Virginia and of Commissioner Stathers. It is submitted, however, that an analysis of the testimony offered before the court below will show that it is of the same general character as that which was condemned by the state court. If, however, the evidence offered in the court below has supplied the omission that was made before

the commission, why should the gas company not be required to first introduce such evidence to the commission before applying to the Federal Court for injunctive relief?

(b) *Burden on gas company to show fair value.*

Section 9, chapter 15-0, West Virginia code, provides, in part:

> "At any hearing involving a rate sought to be increased or involving the change of any fare, charge, classification, regulation or practice, after the passage of this act, the burden of proof to show that the increased rate or proposed increased rate, or the proposed change of fare, charge, classification, regulation or practice is just and reasonable shall be upon the public service corporation making application for such change."

It is therefore submitted that the testimony of the witnesses on behalf of the gas company as to the value of gas rights and leaseholds is subject to the objection that the estimates are all based upon speculation, uncertainties and varying contingencies, so as to make such testimony incompetent and of no value to either the commission or the court in arriving at the present fair value of such property. The burden being upon the gas company, and there being no other competent proof before the commission or the court below other than the book cost of such property, neither the commission nor the court below was justified in including in the rate base a value therefor greater than such book cost.

It is true that the evidence of the witnesses on behalf of the gas company is uncontradicted, and if such testimony when analyzed by proper tests is found to be competent proof, then the value of the company's gas rights and leaseholds is shown in the record to be, according to the estimates of such witnesses, from approximately $32,000,000.00 to $45,000,000.00, and the next pertinent inquiry would be as to what part of such gas rights and leaseholds are presently used and useful in the public service.

4. Gas rights should be included in valuation as rate base only to the extent that they are used and useful in the public service.

In Erie vs. Public Service Commission (Pa.), 123 Atl. 471, P. U. R. 1924-D 89, it was held that:

> "Gas holdings should be included and be evaluated only to the extent that they will be developed, used and useful territory, including a reasonable reserve for the continued functioning of the company in its public service."

In 1909 the gas company had a total gas territory of 1,056,443.58 acres, of which 21,519.99 was operated, and the unoperated acreage was 1,034,923.59. (R. 1085) Of this total acreage, from July 1, 1909, to December 31, 1923, about 1,300,000 acres was abandoned. (R. 1086) As of December 31, 1923, the company had gas territory consisting of 68,900.72 acres operated, and 746,009.96 acres unoperated. During the

period from July 1, 1909, to December 31, 1923, only 55,674.26 acres were transferred from the unoperated to the operated acreage account. (R. 1086) These facts suggest, if they do not prove conclusively, that the entire acreage controlled by the gas company is not presently used and useful in the public service, and that present industrial and domestic consumers of gas should not be required to pay a rate to afford a return upon the whole value of such gas territory, when such territory will not be brought into public service for many years to come. This would seem to be especially true if such gas rights and leaseholds are to be given the greatly appreciated value claimed by the gas company, and, the fact that the actual cost of such property was less than $2,000,000.00, and that the cost of carrying the same has been charged to operating expenses and paid for by such consumers.

The court below taking this view of the case, and accepting Mr. Davis' estimates of value, arrived at the conclusion that the highest valuation which could be put upon that portion of the plaintiff's gas territory which it had any claim to include in its rate base was $10,317,311.39, and arrived at that conclusion by calculation and reasoning stated as follows:

> "Mr. Davis, as we have seen, valued the gas owned by the plaintiff and under the 136,834 of proven territory, operated and unopated at $10,317,311.39. On December 31, 1923, plaintiff was operating only 68,981 acres or 50.58% of these. The total supply of gas under this operated territory calculated according to his methods was then 124,994,780 M. C. F., and was worth, he estimated, $5,218,496.50. There was under the acreage which he classed as proven but not

operated an additional 124,105,220 M. C. F. valued by him at $5,098,814.89. If we are right in our understanding of his testimony, it would perhaps be possible to claim that all of the gas in both classes was tributary to the territory which was in operation, in the sense that the plaintiff was drawing from the pools containing it. It will be noted that the total of the gas underlying the proven acreage was 249,100,000 M. C. F. As the plaintiff sells annually about 47,000,000 M. C. F. of which 10,500,000 goes to the West Virginia retail purchasers, it has under its proven territory gas enough for everybody for more than five years and an amount sufficient to meet the needs of its public service patrons alone for almost a quarter of a century."

Counsel for appellant say that such conclusion of the court below is contrary to the holding of the Supreme Court of Appeals of West Virginia in the case of City of Charleston vs. Public Service Commission, 95 W. Va. 91, 120 S. E. 398, in that the state court held that the company was entitled to earn a fair return upon the present fair value of all gas reserves. It is submitted that an analysis of the opinion of the state court will show that such question was not considered or decided.

It is also said that the gas company could not build its present plant on the basis of only a five years' supply of gas, and that it would be unfair that it should be required to carry such excess territory without return until the same should be brought into the public service.

In reply to the first of these objections, it ought to be sufficient to say that it would be more equitable to require the gas company to wait for a return upon such excess gas acreage until the same is brought into the public service, at which time it could be put in the rate base at a capitalization to include carrying charges as well as appreciation in value, than it is to require present domestic and industrial consumers to carry a return upon an exaggerated appreciated value on something that is not, and will not for many years be devoted to the public service.

The answer to the second objection is this: that the large plant constructed by the gas company has been so constructed with the knowledge that large supplies of gas would be available to it through acreage controlled by it and purchases made from other producing companies, and it is now known to be a fact that such supplies of gas are available, and will continue to be available for the estimated period of eighteen years, or longer. At the present it ought to be sufficient for the gas company to receive a return upon the present fair value of all of its tangible or physical property, and so much of the gas reserves as are presently used and useful in the public service.

The question of the proportion of gas reserves presently used and useful was covered by a memorandum of Mr. Hagenah, a witness on behalf of protestants. (R. 1216-1221) In such memorandum two methods are suggested for meeting the situation, whereby the public, on the one hand, would be protected against excessive rates required to afford a return upon property not presently used and useful, and the gas company, on the other hand, would be pro-

tected in its property rights. The adoption of one or the other of the methods suggested would be a matter of policy for adoption by the gas company and approval by the commission.

5. There can be no substantial complaint as to the value fixed by either the commission, or the court below, as to the gas company's tangible or physical property, going concern value and working capital.

Excluding value of leaseholds, gas rights, working capital and going value, Mr. Uebelacker, engineer, witness for the gas company, estimated the reproduction cost new of the physical property as of December 31, 1923, to be $37,054,425.00, and the reproduction cost new less deterioration at $28,631,320.00. (R. 493 et seq.)

Mr. Hagenah, engineer, witness for protestants, estimated the reproduction cost new of the same property, as of the same date, at $35,391,152.00, and the reproduction cost new less depreciation at $23,969,-180.00. (R. 1163 et seq.)

Mr. Uebelacker estimates the historical cost of the physical property at $25,480,378.33. (R. 553 et seq.)

The book cost as of December 31, 1923, is shown by the testimony of Mr. Jirgal, witness on behalf of the protestants, to be $19,945,582.16. (R. 1059 et seq.)

The difference between the estimates of Uebelacker and Hagenah will be found to be due to difference of opinion in allowance for overheads and depreciation.

Mr. Uebelacker also included in his cost of reproduction $254,332.00 as the cost of drilling dry holes. This the commission disallowed and it is submitted properly so.

As to the physical property embraced in the estimates aforesaid Commissioner Stathers reached the conclusion that the present value thereof, as of December 31, 1923, was $25,000,000.00 and Commissioner Divine adopted as such value the sum of $26,000,000.00.

It was agreed that the amount of $990,000.00 should be added for working capital. The commission allowed for going concern value the sum of $3,000,000.00. The appellant was apparently satisfied with this item with the allowance for going value until the filing of its brief in this court, for an examination of the bill of complaint does not disclose any complaint of the failure to allow more than $3,000,000.00 to cover going value. At any rate it is submitted that the allowance of more than $3,000,000.00 to cover going value would not be justified until a more definite formula or rule is laid down for determining such value by commissions and courts.

It is therefore submitted that the value fixed for the physical property, working capital and going value by the commission, as well as by the court below, finds

ample support in the evidence of record, and that there can be no substantial complaint on this ground.

6. The court below did not err in not including in the value of the tangible or physical property the sum of $2,044,778.24 on account of new investment in such property added and put in use during the year 1924.

(a) *The court below used value as of December 31, 1923, and earnings for the calendar year 1923 in the calculation for the purpose of ascertaining the return afforded.*

In making the calculations for the purpose of ascertaining the return afforded by the rates of the gas company, the court below used the earnings for the year ending December 31, 1923. (R. 1237). In further evidence of this fact, the following is quoted from the opinion of the court below:

> "In our consideration of the case, for income and outgo, we have used the figures for the calendar year 1923."
>
> (R. 1274.)

Had the court included the item of $2,044,778.24 in the valuation of the property as representing the additional investment of property put into use during the year 1924, it would have likewise had to use the

earnings for the calendar year 1924 for the purpose of the computation.

It is therefore submitted that there was no error by the court below in the above particular.

II.

The value of the gas company's property used in the service of its domestic and industrial consumers within the State of West Virginia was not more than $11,251,499.00.

The commission in its opinion did not allocate any separate value to the gas company's property devoted to the public service within West Virginia but after reaching a conclusion as to the present fair value of the company's property and making certain necessary and proper adjustments in earnings and operating expenses, a conclusion was reached that on the whole the company was earning more than a reasonable rate of return upon the value so ascertained. However, the percentages applicable and the methods of allocating the value of the property, earnings and operating expenses as between the classes of consumers and localities served have never been and are not now a matter of serious controversy. The court below simply used such methods and applied such percentage to the values which were determined upon in arriving at the total value of appellant's property of all kinds, used and useful, and thereby ascertained that the value of property used in the so-called regulated business would not

exceed $11,251,499.00. The difference between this latter sum and what the appellant contends for in its brief is due to the main points in difference as to the proper method of valuing the property used and useful in the public service.

It is asserted on behalf of the commission that all of the gas business of the appellant is a public service business and subject to regulation. (Munn vs. Illinois, 94 U. S. 113, 24 L. Ed. 77; 9 Roses Notes, U. S. Rep. 510 et seq.; Clarksburg Heat & Light Company vs. Public Service Commission, 84 W. Va. 638; Carnegie Natural Gas Company vs. Swiger, 72 W. Va. 557; Peoples Natural Gas Co. vs. Public Service Commission, 279 Pa. 252.)

If this proposition be correct and the gas company is earning a sufficient return from its whole business, it would be immaterial what value is to be assigned to industrial and domestic consumers within the State of West Virginia, and what portion of the earnings and operating expenses shall be allocated thereto. In other words if there should be discrimination between classes of consumers resulting in one class paying less than it should, this could not be confiscation and subject to correction by the federal courts.

III.

The allowance of 3.65 per cent per year of the value of the gas company's property was a generous allowance for amortization.

Commissioner Stathers held that the gas company should be allowed 4.15 per cent of the present fair value of the property for amortization, and that for depletion and depreciation there should be allowed 1.12.5 per cent of the book cost. (R. 120-129) In all previous cases involving gas companies before the commission it had been held that the utility was only entitled to amortize the book or investment cost of its property, and not the present fair value thereof, and it is submitted that such holding is supported by very respectable authority.

In the light of the exhibits in the record and the various calculations relating to amortization and depreciation, the court below felt that 3.65 per centum per annum was a generous allowance for amortization, and this conclusion finds ample support in the record, as might be demonstrated by proper analysis. Such demonstration and further discussion of this question, it is felt, will serve no useful purpose if, as is asserted, the appellant is not entitled to include as a part of its rate base the full appreciated value of its gas reserves, and is required to account for gas sold to its parent companies, on the same basis as sales to independent companies, and is also required to account for the earnings from its gasoline business.

In discussing the question of amortization, counsel for appellant, on page 53 of their brief, assert that Commissioner Stathers fell into error by deducting from the rate base of $35,999,969.14 as found by him, in addition to an item of working capital of $990,000.00, the further sum of $14,028,737.03, which latter sum he says is the amount of property already amor-

tized as of December 31, 1923. It is further asserted that the treatment accorded the matter by Commissioner Stathers results in a double deduction, and that the effect thereof is to deprive the appellant of any compensation whatever for gas already sold and delivered to its customers and the depreciation which its plant has already suffered. That the statement contained in appellant's brief is not correct will appear from careful analysis of the opinion written by Commissioner Stathers, especially that part thereof relating to the definition of "amortization," "depreciation" and "depletion." First let it be noted that the treatment of the subject referred to in appellant's brief by Commissioner Stathers does not relate to the ascertainment of the present fair value of the property. Commissioner Stathers accepted Mr. Uebelacker's theory of amortization and depreciation, namely, that the term "amortization" applies to an allowance for the eventual retirement of the present value of the gas rights and the present value of operating plant upon the exhaustion of the supply of natural gas which is essential for its operation; and that the term "depreciation" means simply an allowance for the purpose of compensating the utility for property consumed in the service, but that such allowance for depreciation is in no sense for the purpose of returning the value of the property used in the service at the termination of such use. The allowance for amortization takes care of that. In making an analysis of the books of the company for the period from 1916 to December 31, 1923, Commissioner Stathers ascertained that there had been returned to the company for amortization purposes the sum of $14,028,737.03, and that in addition to this, the company had received by way of de-

preciation allowance during the same period considerably more than it had used.

In Fuhrmann vs. Iriquois Natural Gas Company (N. Y.) P. U. R. 1919-D 76, it was held:

> "The amortization charge against the consumers of a natural gas company should not be confined to the period following a valuation in a rate proceeding, but should be spread over the entire life of the company, both past and future."

Contrary to the holding of the commission in former cases, Commissioner Stathers held that the fair value of the gas company's property was to be amortized, rather than the book cost thereof, and, agreeable to the principle announced in Fuhrmann vs. Iriquois Natural Gas Company, *supra*, he proceeded to ascertain that the unamortized portion of the fair value of the gas company's plant was $20,981,232.11, the other part of such value having been amortized prior to December 31, 1923. Assuming future life of not less than eighteen years, Commissioner Stathers estimated and found that 4.15 per cent of the unamortized portion of appellant's property would provide sufficient amount in each year to amortize the unamortized portion of such property.

The gas company has earned by way of depreciation allowance more than was used for the purpose of taking care of the wear and tear upon the physical plant in the past.

It is, therefore, submitted that the contention of the appellant in the above particular is without merit.

IV.

In adjusting the earnings of the gas company for the year 1923, the commission and the court below added to the earnings as reflected by the company's books the sum of $2,143,661.46 (not $1,495,496.69) on account of sale of gas to the parent companies.

Appellant is apparently in error as to the extent of the adjustment made on account of sales of gas to the parent companies. The commission, in making adjustment of the gas company's earnings on that account for the year 1923, added $2,143,661.46. (R. 132) The detail of this adjustment is explained by Mr. Jirgal, a witness on behalf of the protestants. (R. 422 and 1162) The court below made like adjustment in like amount. (R. 1238)

(a) *This adjustment is equitable and proper.*

Appellant contends that the sale of gas to its parent companies is an unregulated portion of its business, and for that reason such sales of gas are of no concern to the industrial and domestic consumers. First, in reply it is asserted that all of the business of the appellant is subject to public regulation, on the authority heretofore cited. But, without further discussion of that point, it is submitted that the appellant's contention is wholly untenable. The record discloses that the amount of such sale to parent companies for the year 1923 was 17,613,173,000 cubic feet of gas. It

is at once obvious that a very considerable part of the large investment made by the company has been made to supply the parent companies and other wholesale consumers, and it seems only fair that they should bear their share of the burden. In order to supply such parent companies and wholesale consumers, the gas company necessarily had to build larger transmission lines, install more and larger compressor stations, and incur large investment and expense in many other ways which would not be required for the service of the domestic and industrial consumer.

(b) *Adjustment in accordance with former adjudication by the Supreme Court of Appeals of the State of West Virginia.*

The adjustment made by the commission and by the court below on account of the sales to the parent companies has been made in all previous cases before the commission involving the gas company's earnings, and the specific question was the subject of review by the Supreme Court of Appeals of the State of West Virginia in the case of City of Charleston vs. Public Service Commission, supra, and in which the method adopted for such adjustment by the commission herein, and as well by the court below, was specifically approved by the court. The gas company made no application for rehearing in that court, and took no appeal therefrom. Consequently, it is asserted by the commission that such adjustment is a matter which has been formerly adjudicated and is binding upon the gas company in this suit. Former adjudication was alleged and set up in the answer filed by the commission and other defendants to the bill of complaint in this case.

V.

The commission and the court below adjusted the gas company's earnings for the year 1923 by adding thereto the sum of $934,393.41 on account of gasoline earnings.

As heretofore shown, prior to May 1, 1922, in all cases before the commission involving the gas company's earnings and expenses the commission required that the company account for fifty per cent of the net proceeds of the gasoline business, on the theory that that was a reasonable compensation for the privilege of extracting gasoline from the natural gas transported through the company's mains. In May, 1922, the gas company transferred its gasoline business to a subsidiary company, all the capital stock of which is now owned by the two parent companies, and then the gas company entered into a contract with the subsidiary company whereby, among other things, the subsidiary company was to have the right to extract gasoline from all gas transported through the mains of the gas company, in consideration of a royalty of one-eighth of the gross proceeds from the sale of gasoline so produced.

(a) *The adjustment is proper and equitable.*

It appears from the record that 50 per cent of the net proceeds from the gasoline business is very much more than one-eighth of the proceeds of the sale of the

gasoline produced. It is at once obvious that the privilege of extracting gasoline from natural gas transported by the gas company is of great value, and that is conceded by the appellant, but it contends that it has the right to determine what consideration should be demanded and received for this privilege. This is granted if it were dealing with an independent company, and at arm's length, but it will be recalled that the company now exercising such privilege is owned by the same stockholders which own the stock of the gas company. That being true, there can be no separate identities, such as are required for parties to a contract, and the arrangement entered into between the gas company and the company exercising the privilege of extracting the gasoline must be scrutinized closely. The consideration of fifty per cent of the net proceeds for the exercise of such privilege had been prescribed by the commission for many years, and from which action of the commission no appeal has ever been taken by the gas company. Consequently, it must be concluded that the gas company assented to the adjustment as being fair and equitable.

(b) *The adjustment is in accordance with former adjudication by the Supreme Court of Appeals of the State of West Virginia.*

As hereinbefore shown, in the decision of the commission resulting in the order of August 9, 1923, which was the subject of appeal to the State Supreme Court of Appeals, the commission held, in accordance with the gas company's contention, that a royalty of one-eighth of the proceeds of sale of the gasoline pro-

duced was a reasonable consideration for the privilege of extracting gasoline from the gas transported by the gas company. Pursuant to the statute, the City of Charleston, a protestant in such proceeding before the commission, appealed to the Supreme Court of Appeals of the state, and the Supreme Court of Appeals reversed the order of the commission on several grounds, one of which was that the consideration required by the gas company for the privilege of extracting gasoline was inadequate, and that fifty per cent of the net proceeds of the sale of such gasoline was a reasonable consideration, and that the commission should adjust the earnings of the gas company in rate matters accordingly. This decision was in the case of City of Charleston, et al. vs. Public Service Commission, 95 W. Va. 91, 120 S. E. 398. The gas company neither applied for rehearing nor took an appeal from the decision in that case, and it is asserted that such decision constitutes former adjudication on the question. Former adjudication of this question was alleged and plead in the answer filed herein by the commission and other defendants.

VI.

The rates complained of in the bill are sufficient to produce a fair return on the value of the gas company's property, and such rates are, therefore, not confiscatory.

If the earnings of the gas company as a whole are sufficient to afford it a fair return on the present fair

value of its property, after taking care of operating expense and the proper allowances for amortization and depreciation, there can be no confiscation, and the court would be without jurisdiction of the bill in this case.

Assuming that the allowance fixed by the commission for amortization and depreciation, namely, 4.15 per cent of present fair value of the appellant's property for amortization, and 1.12 per cent of book cost of physical property for depreciation, an analysis of the earnings and expenses of the gas company for the year ended December 31, 1923, will conclusively show that the rates allowed by the commission are not confiscatory. On this theory witness Jirgal compiled two statements which were filed before the court below and designated as "Jirgal Exhibit 3, J. C. No. 1" and "Jirgal Exhibit 3 J. C. No. 2." (R. 1161-1162) The difference in the two statements is, that in No. 1 gas sold to parent companies was valued on the basis of the cost of gas at city gate, as explained by Mr. Jirgal at page 379 of the record, and in No. 2 such gas is valued on the basis of the amount paid by comparable companies, as explained by Mr. Jirgal at page 422 of the record. The latter method was adopted by the commission and by the court below. Using the latter method for adjustment of the gas company's earnings for the year 1923, and analyzing the earnings and expenses for such year, it appears that the gas company had net earnings available for depreciation, amortization and return on its whole business of $7,071,414.00. If there be deducted from this sum depreciation and amortization on cost

of reproduction basis, which Mr. Jirgal ascertains at $1,899,537.00, there remains available for return $5,171,877.00. In arriving at this amount it is noted that delay rentals on the entire unoperated acreage have been charged to operating expense and deducted in ascertaining the net earnings as above set forth. Without adding back such rentals, it is found that the sum available for return, namely, $5,171,877.00, will afford a return of eight per cent on $64,649,000.00, which it is submitted is more than the present fair value of the gas company's entire property, including all reserve acreage.

Using the same analysis and allocating the earnings and expenses to West Virginia, it will be seen that net earnings available for depreciation, amortization and return was $1,567,373.00. If amortization and depreciation is deducted from this amount on the basis as allowed by the commission, there is left available for return on the West Virginia property $1,048,800.00, which will afford a return of eight per cent on $13,110,000.00. It is submitted that the present fair value of that portion of the gas company's property used and useful in the service in West Virginia does not exceed the latter sum of $13,110,000.00.

If the amounts paid for delay rentals and charged to operating expenses are added to the net earnings, it will be seen from statement No. 2 aforesaid that the amount available for return on the whole property will be $5,761,063.00, or eight per cent on $72,013,000.00, and that the amount available for return on the West Virginia property will be $1,196,745.00, or eight per cent on $14,959,000.00.

It is submitted that the computations shown on said exhibits (R. 1161-1162) demonstrate conclusively that there can be no confiscation resulting from the rates fixed by the commission.

VII.

The order of the District Court refusing interlocutory injunction should be affirmed.

Respectfully submitted,

F. M. LIVEZEY,

Attorney for Public Service Commission of West Virginia.